

MONOGRAPH

ON

WOOD MANUFACTURES

IN THE

PUNJAB,

1887-88.

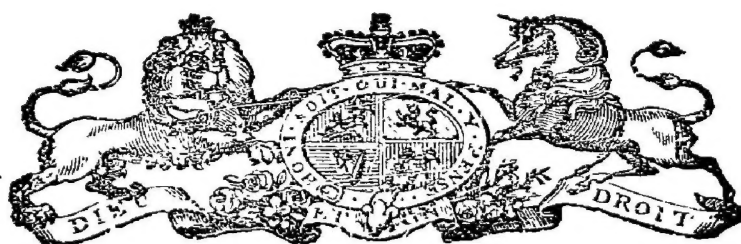
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1889.

No. 602.

FROM

H. C. FANSHAWE, ESQUIRE,  
*Offg. Secretary to Government,  
Punjab and its Dependencies,*

TO

D. C. JOHNSTONE, ESQUIRE,  
*Junior Secretary to the Financial Commissioner,  
Punjab.*

*Dated Lahore, 18th November 1889.*

**Revenue and Agriculture.**

General.

SIR,

I AM directed to acknowledge the receipt of your letter No. 708, dated 14th October 1889, submitting, with the Financial Commissioner's remarks, the monograph on wood manufactures compiled by Mr. M. F. O'Dwyer, c. s.

2. The Lieutenant-Governor agrees with Mr. Elsmie that the monograph has been carefully prepared by Mr. O'Dwyer, and that the pains bestowed upon the work are deserving of approbation. Manufactures in wood, as remarked by the Financial Commissioner, are not of much commercial importance, at least as regards export to places outside the Province. Apart from the use of wood in buildings, the demand for articles manufactured from wood was in the times preceding British rule very limited indeed, being confined, with few exceptions, to the carved doors and windows of the houses of the better-to-do classes, the rough agricultural implements mentioned in the report, and the scanty furniture found in a Native house. That with the introduction of European rule the Native workers in wood have been able to meet the very considerable demand of both European and Native customers for furniture, carriages and carts and other articles of the kind is a matter of no small importance, and, though exports may for many years to come be confined to a few articles of artware, not elsewhere produced, yet the manufacturing industry can with justice be said to be progressive so long as it can comply with the requirements of a population growing in wealth and civilization.

I have, &c.,

H. C. FANSHAWE,  
*Offg. Secretary to Government, Punjab.*

No. 702.

FINANCIAL COMMISSIONER'S OFFICE,

LAHORE, dated the 14th October 1889.

FROM

D. C. JOHNSTONE, ESQUIRE, C.S.,

*Junior Secretary to Financial Commissioner, Punjab,*

TO

H. C. FANSHAWE, ESQUIRE, C.S.,

*Junior Secretary to Government, Punjab.*

SIR,

The preparation of a monograph on the wood manufactures of the Punjab, to be based on the district reports called for in this office Circular No. 15 of 1888, was entrusted by the Financial Commissioner last year to Mr. M. F. O'Dwyer, C.S., then Assistant Commissioner of Shahpur, and now Settlement Officer, Gujranwála. The monograph is now submitted for the perusal of His Honor the Lieutenant-Governor. It has been much delayed by circumstances beyond Mr. O'Dwyer's control, namely, his acting as Deputy Commissioner of Shahpur for several months and more recently as Under-Secretary to Government.

2. Mr. Elsmie is of opinion that Mr. O'Dwyer shows considerable skill in dealing with the material at his disposal, and has earned the commendation of Government. The monograph gives much useful information regarding one of the industries of the Punjab, which, though perhaps of no great commercial importance at present, is nevertheless interesting in itself, and may very possibly prove capable of considerable development in some of its branches—*e. g.*, carving, furniture-making, boat and cart building.

3. Of all the district reports Mr. Maynard's (Hissár) appears to have been the only one of marked value; but the reports of the following officers deserve praise:—Baron Bentinck, Deputy Commissioner, Jhang; Moulvi Inám Ali, Assistant Commissioner, Hoshiárpur; Narendra Náth, Assistant Commissioner, Gurdáspur; Mr. Bunbury, (lately) Assistant Commissioner, Pesháwar; Mr. Nicholl, Secretary to the Municipal Board, Amritsar. Mr. O'Dwyer also received, he says, great assistance from Kirthi Singh, Manager of the Kalra Ward's Estate, district Shahpur.

I have, &c.,

D. C. JOHNSTONE,

*Junior Secretary to Financial Commissioner, Punjab.*

# MONOGRAPH ON WOOD MANUFACTURES IN THE PUNJAB.

A thoroughly satisfactory account of the wood industries of the Punjab will require a more exhaustive enquiry into the conditions of the trade than has yet been made. Indeed, it may be doubted whether any inquiry conducted within reasonable limits would give results of more than relative accuracy. From the Statistical Returns, however, a general idea of the relative importance of the different branches of the industry may be gathered.

It may be remarked here—

1<sup>st</sup>, that the District Returns are far from uniform in regard to the branches of the industry for which statistics are supplied;

2<sup>nd</sup>, that, with one or two notable exceptions, the District Reports are strong only in subjects which have been treated already by Messrs. Baden-Powell and Kipling (*Punjab Manufactures* and the *Journal of Indian Art*).

2. The subject will briefly be treated under the following heads, statistics being inserted along with the text, while statistics showing the state of the handicraft in the different districts will be thrown into the appendices:—

- A. Wood supply, wood-yards, measurements and prices, &c.
- B. Castes.
- C. (a) The “Sep,” or village tarkhāns, &c.  
(b) Tarkhān as an artistic workman.  
(c) Wages.
- D. Architectural wood-work.
- E. (a) Lacquer-work and turnery.  
(b) Kamāngiri.
- F. Furniture—  
(a) Native.  
(b) European.  
(c) Inlaid-work.
- G. Carriage-building—  
(a) Native.  
(b) European.
- H. Boat-building.
- I. (a) Musical instruments.  
(b) Miscellaneous.

## A.—WOOD SUPPLY.

3. The question whether the wood supply is likely to continue equal to the demand is too large to be discussed within the limits of this monograph. In brief, it may be said that the process of natural reproduction on the higher ranges is generally satisfactory, and also in the outer ranges, where the growth of seedlings is not interfered with by fires or by grazing. The Forest Department also annually plant or sow a considerable area of land; the total area of plantations being in 1887 about 17,997 acres, a small reserve. Further reserves will be found in the reserved protected forests and the unclassified State forests under the Forest Department:—

Reserved Forests	...	...	...	...	1,551 square miles.
Protected	...	...	...	...	376    „    „
Unclassed	...	...	...	...	3,272    „    „
Total					5,199 square miles.



4. The value of timber, excluding firewood, sold by the Forest Department during the year 1887-88 was Rs. 3,27,000; in 1886-87, Rs. 6,33,000. The average amount annually sold is close on 5 lakhs.

5. Timber is imported largely from Kashmír, the Native States of the Punjab, and the independent territories of Afghánistán. (1) Imports from other countries. Deodár logs, pine sleepers, scantlings and bamboos are most commonly imported. The extension of railways in the Punjab gave an enormous impetus to the trade. The value of these imports for the four years ending 1886-87 averaged  $12\frac{1}{2}$  lakhs of rupees per annum, excluding firewood. The increasing use of steel sleepers has, however, given a check to the demand. The imports in the year 1886-87 were only a little over 10 lakhs, and in 1887-88 were probably still less. Nearly all of this wood is brought down by river from Kashmír and sold at the great central depôts on the Jhelum, Chenáb and Rávi.

The imports from other provinces is comparatively small. In 1886-87 (2) Imports from other provinces. 160,000 maunds were so imported, to which a value of Rs. 1,60,000 is assigned. The imports are chiefly from North-Western Provinces (Rs. 1,25,000) and Karáchi (Rs. 18,000).

(1) Exports to other countries. 6. There is practically no export of wood to other countries.

The exports to other provinces average 35,000 maunds annually, valued at Rs. 35,000. This goes chiefly to Sukkar in Sindh and (2) Exports to other Provinces. to stations in the North-Western Provinces.

7. It appears, therefore, that on the average wood to the value of five lakhs of rupees is sold annually by the Forest Department of the Province, wood to the value of Rs.  $12\frac{1}{2}$  lakhs is imported from other countries, and  $1\frac{1}{2}$  lakhs from other Provinces, giving a total of 19 lakhs. As the exports of wood are insignificant, all this wood may be said to be worked up in the Province. In addition to this must be reckoned the value of the wood cut and sold within the Province by private persons, Public Boards, &c. Of this there is no record; but, estimating its value as 16 lakhs of rupees, we get the total value of the wood annually worked up within the Province as 35 lakhs. No doubt the greater portion of the imported wood is taken by the Railway and Public Works Departments for sleepers and building purposes; and the introduction of steel sleepers for the Railway and of iron rails for roofing purposes will tend in future years to considerably diminish their demand.

8. The increased demand of wood of late years for railway and building purposes, with the consequent increase of the supply, has (1) Wood-yards and dealers. naturally increased the number of dealers—wholesale and retail. This class is found chiefly at the great depôts on the Punjab rivers, where the timber imported from Kashmír and other foreign territories by river is stocked, viz., Jhelum, Wazírabad, Phillour, &c., and also at the sale depôts of the Forest Department. The information supplied as to their numbers, methods of doing business, scale of profit, &c., is very scanty; but there seems reason for supposing that this special class have got the monopoly of the business into their hands, and this may be one cause of the complaint that wood is getting scarcer and dearer.

At all the large depôts wood seems to be as plentiful and cheap as it ever was, and the Forest Department appear to have some difficulty in disposing of their produce, for the value of the unsold timber in their depôts at the end of the year 1887-88 was Rs. 2,95,000 as against Rs. 92,000 at the end of the year 1886-87. There is, therefore, no lack of the raw material, and there seems to be no ground for the statement that shisham, &c., are growing scarce and difficult to procure. Were it so, one would expect the prices to be much higher than they are at present. In certain localities, such as Simla and its neighbourhood, all the better class of timber-trees are growing scarce, and the prices are high, but with regard to the Province generally the supply is quite equal to the demand. To this remark an exception must be made in the case of walnut, which tarkhás declare is not only scarce, but often is not to be had.

9. The following are the prices for the more important species of timber:—  
Per cubic foot.

				Rs. a. p.			Rs. a. p.				
TREES OF FOREIGN GROWTH.											
Deodar ( <i>Cedrus deodar</i> )	...	...	...	0	12	0	to	1	8	0	
(In Government depôts 11 annas per cubic foot for logs less than 12 feet, and 1 anna per every additional foot in length).											
Chil ( <i>Pinus longifolia</i> )	...	...	...	0	6	0	to	0	12	0	
Kail ( <i>Pinus excelsa</i> )	...	...	...	0	6	0	„	0	12	0	
Khair ( <i>Acacia catechu</i> )	...	...	...	...	...	...	„	0	1	0	
Dhaman ( <i>Grewia oppositifolia</i> )	...	...	...	...	...	...	„	0	6	0	
Kilāwa ( <i>Wrightea mollissima</i> )	...	...	...	0	8	0	„	0	12	0	
Chikri ( <i>Buxus sempervirens</i> )	...	...	...	...	...	...	„	0	3	0	
Kahu (wild olive)	...	...	...	...	...	...	„	0	2	0	
TREES OF INDIGENOUS GROWTH.											
Táli	}	( <i>Dalbergia sissu</i> )		...	0	12	0	to	1	8	0
Shisham				...	0	12	0	„	1	8	0
Tún ( <i>Cedrela tuna</i> )	...	...	...	...	0	12	0	„	1	8	0
Kikar ( <i>Acacia arabica</i> )	...	...	...	...	0	6	0	„	0	12	0
Tút ( <i>Morus laevigata</i> )	...	...	...	...	0	6	0	„	0	12	0
Jáman ( <i>Sizygium jambolanum</i> )	...	...	...	...	0	6	0	„	0	12	0
Drek [or bakain] ( <i>melia</i> )	...	...	...	...	0	6	0	„	0	12	0
Ber ( <i>Zizyphus Jujuba</i> )	...	...	...	...	0	6	0	„	0	12	0
Phulái ( <i>Acacia modesta</i> )	...	...	...	...	0	6	0	„	0	12	0
Siris ( <i>Acacia speciosa</i> )	...	...	...	...	0	6	0	„	0	12	0

A full list of the timber-trees used in the Punjab, with the uses to which the wood is put, will be found in Appendix I.

10. In wholesale dealings with the Forest or Public Works Departments the cubic foot is the unit of measurement. It is also employed by petty dealers and carpenters in buying from depôts. Tarkhāns, in dealing with one another, sell by the tree or the block, and to compute the size they have recourse to the tassu system of measurement. The tassu contains 1,536 cubic inches, and is, therefore, eight-ninths of a cubic foot. The tassu is, however, a multiple of a smaller measure, the tánswansi, 24 of which go to make a tassu and 27 to make a cubic foot. As far as can be gathered from the reports, the tassu does not vary, at least in theory, in different districts.

B.—CASTES.

11. The tarkhán known as barhai in the North-Western Province and as khati in the eastern plains, is, like the lohár, said to be in origin a village menial. The caste is much sub-divided; a list of these sub-divisions, though far from complete, is given below. The figures, where available, are taken from Mr. Ibbetson's Census Report. It will be noticed that the gôt names coincide very largely with the names of small agricultural tribes. This fact tends to prove community of origin of the tarkhán and the people amongst whom he lives, and also the fact that tarkhán is rather the name of an occupation than a race distinction.

Table for Divisions.

Divisions.				Number.	Chief Gots.
Dehli	...	...	...	91,045	Jahugra, Khatti, Pathán, Shekh.
Jullundur	...	...	...	110,784	Dhaman, Dhamnah, Ghora, Jhiwar, Khatti, Netál, Ráj-pút, Siawan.
Lahore	...	...	...	125,446	Arora, Bhatwál, Bhatti, Dhaman, Gade, Khatti, Khokkar, Matháru, Megh, Sikh, Siawan, Tarr.
Ráwalpindi	...	...	...	138,025	Arora, Awán, Bhatti, Chohán, Janjua, Khokkar, Thori, Sikh.
Pesháwar	...	...	...	24,390	Awán, Afghán, Begi Khel.
Deraját	...	...	...	18,319	Bhatti, Butcher, Chogatta, Janjua, Dhobi, Khokkar, Jhiwar.
Total	...	...	...	508,008	

12. The total male adult tarkhán population may be estimated at one in six, or, approximately, 84,668. Figures for the more important gôts, taken from the Census Report, are as follows :—

<i>Gots.</i>	<i>Total population.</i>
Bhatti ... ..	18,837
Begi Khel ... ..	2,212
Dhaman ... ..	71,519
Gade ... ..	2,209
Jahugra ... ..	9,518
Janjua ... ..	12,576
Kliatti ... ..	19,071
Khokkar ... ..	27,534
Matháru ... ..	6,971
Netál ... ..	2,764
Siawan ... ..	1,932
Dháru ... ..	2,822

For alphabetical index of gôts or sub-divisions, see Appendix III.

### C.—TARKHÁNS AND THEIR WAGES.

13. The village tarkhán is chiefly occupied in the making of agricultural implements or in executing petty repairs. If work of a higher order be given him, perhaps, if not artistic, his work will certainly prove equal to the requirements of his village employers. To better his position, the villagh tarkhán often migrates to seek employment on the Railway, or settles to earn a precarious livelihood in some neighbouring town. This is the extent of his enterprise.

His position in his native village, though the best amongst the class of village menials, is poor. He seldom rises into a position of affluence. In a few isolated cases, as in the Lahore District, he has been able to acquire land; but in general he lives from hand to mouth, and can do little more than make both ends meet. For all ordinary work—*e. g.*, repairs—the village tarkhán is paid in kind. For special work, such as construction of well-gear, carts, &c., he is paid at the rate of three to five annas per diem. The zamíndárs, however, sometimes prefer to give larger pieces of work, such as the construction of Persian wheels, out on contract; the employer finding the timber and food. In such cases the wages is a lump sum equal to the price of raw material. In villages of the Ráwalpindi Division he receives on an average 32 seers per plough.\* In the Delhi Division he receives 40 to 50 seers per Persian wheel, or half as much per plough, also a sheaf (bhar = 10 seers) and a bundle (gaira = 5 seers) per harvest. In a Sutlej village he receives four maunds per well, a topá per heap, and 20 twists of tobacco and a day's cotton picking per harvest. In a Rávi village he receives three maunds and a sheaf of grain, &c., per harvest.

14. An ordinary Sep's outfit will probably not cost less than Rs. 15 and not more than Rs. 30. It consists of—

					<i>Price.</i>						
					Rs. a. p.				Rs. a. p.		
(1)	<i>Kulhára</i> (axe)	...	...	...	2	0	0	to	3	0	0
(2)	<i>Tesha</i> (adze)	...	...	...	1	8	0	to	2	0	0
(3)	<i>Sáthra</i> (chisel)	...	...	...	0	4	0	to	0	12	0
(4)	<i>Ara or ári</i> (saw)	...	...	...	1	4	0	to	2	8	0
(5)	<i>Varma</i> (drill)	...	...	...	0	6	0	to	0	12	0
(6)	<i>Retí</i> (file)	...	...	...	...	...	...	...	0	8	0
(7)	<i>Hathora</i> (hammer)	...	...	...	...	...	...	...	0	8	0
(8)	<i>Compasses</i> (parkár)	...	...	...	...	...	...	...	1	0	0
(9)	<i>Randah</i> (plane)	...	...	...	...	...	...	...	0	12	1
(10)	<i>Sutlí</i> (string)	...	...	...	...	...	...	...	0	1	0

All these instruments† are of Native manufacture. English files, saws and planes are coming into use, but slowly.

15. In addition to the ordinary repairs, the village tarkhán turns out the following agricultural implements, for a detailed account of which Mr. Baden-Powell's book may be consulted :—

\* See Settlement Report.

† For descriptions, see Punjab Manufactures, Volume II., Baden-Powell.

- (1) *The plough (hal)*.—In its usual form the plough consists of five pieces : (a) the beam (kur) of tali or kika; (b) the shaft (hal) of kha or kika; (c) the upright (janji) of ber; (d) the handle (hath) of kika; (e) sarma, the piece of wood attached to the shaft; (f) the share (phála) is made by the lohár—the cost is not more than Rs. 2-12-0.
- (2) Panjáli, or yoke of drek, kika or ber, cost Re. 1-12-0.
- (3) Sohága, or clod-crusher, a wooden beam about seven feet in length, nine inches broad and six inches deep, of kika or tali, cost Rs. 2-8-0
- (4) Jandra, a large wooden rake with long handle, used for preparing small beds for irrigation, of kika, cost Re. 1-8-0.
- (5) Kará, a large square rake for levelling, cost Rs. 2.
- (6) Trangli, wooden pitch-fork with 8 or 9 prongs, cost Re. 1.
- (7) Sanga, a wooden fork with two prongs, cost As. 12.

Other instruments of which the tarkhás make only the handles are : the dátri (sickle), price 3 annas ; the ramba or khurpa (trowel), price 4 annas ; the phora, kassi or kahi (mattock), price Re. 1 ; the gurdasa or laka (chopper), price 8 annas.

Special machines made are :—

						Price.		
						Rs.	a.	p.
Rice husking machine	...	...	...	...	..	5	0	0
(Belna) sugar-cane	...	...	...	...	...	45	0	0
(Kapas belna) cotton-cleaning	...	...	...	...	...	1	12	0
(Kohhl) oil-crushing	...	...	...	...	...	8	0	0
Persian wheels	...	...	...	...	40 to 50	0	0	0
Jhallárs	...	...	...	...	...	30	0	0
Dhingli	...	...	...	...	...	1	4	0

These prices do not offer a large field for competition by machines of greater efficiency and improved construction, and only in the case of sugar-cane machines has the attempt to introduce a superior type of machine proved a commercial success. It is possible that the zamíndárs (with increasing intelligence) may in the future take kindly to improved forms of ploughs, &c., but of this there are few signs at present. Materials do not exist from which (even fairly accurate) tables can be made ; but on a rough calculation, the amount turned out, or, more correctly, the amount absorbed by the village tarkhán, cannot be much under Rs. 60,00,000 (sixty lakhs).

16. The members of the tarkhán class found in the towns are in general more intelligent and better handicraftsmen than those in the villages. But they are equally characterized by a lack of enterprize. “ Even if they find a good market for any particular class of goods they turn out piece after piece which, usually copies of copies to begin with, have all the defects of the first copy gradually magnified till soon all technical merit is lost.”

A tarkhán will, if forbidden to copy European models, work with considerable effect and artistic propriety. But at best his work is spoiled by a certain want of finish. He exhibits a tendency to leave his work crooked in line and unfinished in joints. Work under European supervision in the Railway workshops and under the officers of the Public Works Department has gone some way in checking this tendency, but at the same time it has probably driven out of his head those ideas in the realization of which lay the excellence of his former work.

17. Native demand for work of high quality is likely to continue to diminish. The Public Works Department have at least done this— they have effected an entire change in the public taste. Now public taste regards the small rooms and the floridity of the old house ornamen-

The city Tarkhán.—Mr. Kipling.

The Tarkhán as an artistic worker.—Mr. Kipling.



tation as remnants of its barbaric prime, and turns to the simplicity of the dāk bungalow as its model of perfection. Simplicity is no doubt to be desired, but plain doors with frames of different sizes, windows and doors that would not shut, or if once shut refuse to open,—characteristics of the average tarkhán's work,—do not go well with a severe simplicity, which, to be tolerable, must be perfect as regards joinery and finish.

While the native demand will diminish, the European market with the opening of Railways is yearly becoming more accessible. There is no reason why Punjab wood-work, which is at the same time artistic and portable, should not find a ready market in Europe. Recent exhibitions have shown that specimens of Punjab wood-work are bought with avidity in England, and some impulse has no doubt thus been given to the trade.

Two wood-carvers from Bhera are now employed in London by the Kensington School of Art. Their expenses to England were paid, and they receive a regular salary of Rs. 90 per mensem. Probably artisans have also gone from other districts. This new development is due to the good offices of Mr. Kipling, who has done so much to bring the handiwork under the notice of the public, and to help the artisans to find a market. But if the tarkháns are left to themselves it is not probable that the stimulus will have more than a passing effect. The rise of the export trade will necessarily be slow; the difference in business habits, the unfailing want of punctuality in fulfilling orders, &c., must long act as hindrances, but these hindrances are not insuperable.

18. The rate of wages has increased greatly, and that for all kinds of work. Taking the difference over a period of 25 years, one finds that while wages have doubled, the price of wheat has increased almost in proportion. So that the average tarkhán's position is little better than it was a quarter of a century ago. Skilled workmen are probably better off than they were before, and the agricultural tarkhán, sharing with the zamíndár in the benefit derived from the general rise in the price of grain, is in a stationary condition; if anything, his position is somewhat improved.

Some information regarding the rise of wages may be obtained from the *District Gazetteers'* statistical portion, Table XXVII., and from the statistics published by the Department of Finance and Commerce (with the Government of India) in the work "Prices and Wages in India."

With regard to the present scale of wages in the Punjab, it may be remarked that wages for skilled labor is highest near the great centres, towns or cantonments, and in the frontier districts; the Pesháwar and Dear Gházi Khan rates being exceptionally high. The following is a table of the rate of wages for the more important branches of the wood industry arranged for the different Divisions:—

Species of work.	DIVISION.					
	Delhi.	Jullundur.	Lahore.	Ráwalpindi.	Pesháwár.	Deraját.
		Annas.	Annas.	Annas.	Annas.	
Agricultural	As. 3 to Re. 1.	2-6 to 3	4 to 5	3 to 5	4 to 5	8 to 14 annas.
Wood-carving		...	5 to 14	8 to 12	As. 10 to Re. 1	
Furniture		6 to 10	8 to 10	5 to 7	...	
Turnery		...	4 to 8	5 to 8	8 to 12	
Kamángíri		5 to 8	...	...	...	
Carriage-builders		6 to 10	8 to 10	8 to 10	12 to 14	
Boat do.		...	...	5 to 10	8	
Basket-makers		2-6 to 4	3 to 6	2 to 3	..	
Comb do.		2-6 to 5	3 to 6	2-6 to 8	..	

## D.—ARCHITECTURAL WOOD-WORK.

19. It has frequently been remarked that the distinguishing feature of the industrial arts of the Punjab is their Muhammadan character. The remark is specially applicable to wood-carving. To quote the words of Mr. Kipling in the *Indian Art Journal*:—

“The Hindu fantasy of design which is so noticeable in other parts of the Empire, even in objects applied to Muhammadan uses, here finds expression only in a few rude sculptures and pictures, usually from hill districts, and are entirely absent from the buildings of the plains.

“The sculptures that once decorated the Gandhāra monasteries in the Eusafzai country on the Peshāwar Frontier are exceptions; for in an artistic sense they are the most complete of any in India. But they belong to a time with which nothing now in existence in the Province has any connection, and they are the work of a race which has apparently left no other traces of its art, manners, or faith.

“The Sikhs were making a beginning towards a free Hindu modification of Muhammadan motives in architecture and decoration, and had already accomplished something, when they were overtaken by the English occupation. Their wood-carving has a character of its own, their foliage is elaborately lined and twisted, and small and grotesque figures, human and animal, inadmissible in Moslem work, were beginning to appear.

“But the essential characteristics of what may be called the official style—such as flatness of relief, absence of under cutting, the free use of geometrical diapers incised in line merely in relief or in framed lattice-work, and the late Mughal pillar, pilastic or mehráb,—were retained even by the Sikhs. In the hill temples made of wood (of which there are good examples near Simla), the familiar Hindu form of square pillar, chamfered or fluted into octagonal or circular shapes, and crowned by bracketed capitals,—the elements of a form highly elaborated in wood in Gujrāt and in stone throughout a vast extent of India Proper,—is common enough, but it is scarcely ever seen in the Punjab plains, where a meagre square abacus crowns a lotus-shaped capital, and while it supports the lintel receives in its grooved side a thin cusped mehráb or spandrel.”

Little has been done in the Punjab in the way of carving small articles, *e. g.*; caskets, panels, trays, &c.—objects suitable for exportation. It is on large architectural surfaces that the best design is found. Recent exhibitions have drawn the attention of artists to this species of work, remarkable both for its quality and its cheapness. The result has been, while to a small extent increasing the demand, greatly to raise the prices: and this tendency to unreasonably raise the price to European purchasers is one of the great hindrances to the extension of the trade.

20. Wood-carving is carried on in every district, and every large town has its master craftsmen. Bhera, Amritsar, Batála, Chiniót, Hoshiárpur, Hissár, have a provincial reputation. But in none can the trade be said to be thriving. Local demand will probably continue to diminish, and the export trade under the most favourable conditions can increase but slowly. Did wood-carvers form a separate craft they would be badly off indeed, but such is not the case; any ordinary tarkhán will turn out carved work of some artistic value. Mr. Kipling traces the secret of this widespread facility to the training which all carpenters receive in their youth. They go to work when very young, employ the leisure left them from helping their master or father in carving ornaments in relief on spare pieces of board, beginning with the dog-tooth notching that used to be popular in English artistic furniture thirty years since. From this they are promoted to foliated mouldings and diapers, and taught to draw the pillar in all its parts and the mehráb.

There are many workmen who do not keep up their ornamental practice, but all learn some patterns; and those who are gifted with a feeling for design have with this constant practice acquired a crispness of touch and a surety of

execution which is of the first importance in wood-cutting, which "to be done well should be done at once."

21. As far as the craft can be considered a special and separate one, the statistics showing the number of workmen employed, &c., are given in the following table:—

Total for Province.	Muhammadan.	Hindu.	Caste.
4,086	938	...	{ Awán (Pesháwar). Chohán Rajpút (Bhera). Chogatha (Deraját). Batti.

Of these 1,200 are reported to be proficient.

The reports are not very particular in distinguishing the castes, many even do not give the number for Hindús and Muhammadans. The figures are most unsatisfactory in every respect.

22. The subjects in the descriptive portion of this section will be taken in the following order:—

- (i) Doors and doorways;
- (ii) Balconies;
- (iii) Pinjra, or lattice-work.

The door-frame (chaukat\*), figs. I and II, consists of lintel, jambs (baju), and sill, ordinarily constructed of separate beams. The shape is in most cases rectangular, the height being to the breadth as 3 to 2 or  $7\frac{1}{2}$  to 5.

23. The door itself has two leaves turning on pivots instead of hinges, the joining of the leaves being covered by a raised parting bead (bini), which is always elaborately carved. The leaves of the door are divided into panels, which are sometimes carved, sometimes plated with perforated metal (jharas—Hissár), or left plain and studded with star or shield-shaped metal bosses. The bands separating the panels are often, at least in the older work, carved in a deeply cut running pattern, which withdraws the attention from the monotonous regularity of the panelling, while at the same time it adds greatly to the richness of the general effect. In most modern work it is the bini, or parting bead, and the chaukat that receive the most attention. The forms of ornamentation are mainly arabesques; sometimes, however, conventional leaves and flowers of grotesque animal forms are introduced. The patterns followed are by no means new; the designs now in vogue are nearly all to be found in the older work. In the large panels above the carved lintel, it is the custom to introduce mythological figures with Gánesha or Shiva in some one of his numerous incarnations in the centre. In Muhammadan work, of course, the central panel is left plain, or is cut in some geometric pattern, or is fitted with an inscription. Frequently the doorway is surmounted by a second lintel (toda or shatiridár—Hissár) carved in a similar pattern to those below, but differing slightly both in proportion and form.

24. In the Hoshiárpur District the wood-carvers have something more than a merely local celebrity; the wood chiefly used is deodar, a wood which, owing to the ease with which it is worked, is fast taking the place of shisham. The statistics of the trade are:—

*Centres of industry.*

1. Hoshiárpur.

No. of workmen.

45

Caste.

Tarkhán, Dhamnah, Rajpút

Annual Outturn.

Rs. 53,438.

At Ratya, a small Sikh village in the Hissár District, admirable work, from an artistic point of view, is turned out. The workmen (Hindu) came originally from Sunam in the

2. Hissár.

Patiála territory, a place celebrated for its wood-workers. There is much variety in their work, and their experiments in new designs, &c., are sometimes most successful. The adaptation of the irregular form of the toda or second lintel to the construction of the door-frame is the leading feature of the Ratya carving. The door-frame is not rectangular as it is elsewhere. Wings of wood-work cross from the lintel to each of the jambs at an angle of about  $45^\circ$  to each,



and the line of these transverse pieces is broken and relieved from uniformity by a variety of ingenious devices, among which the use of birds, which appear as flying caryatides, is peculiarly happy. The figures for the district are :—

No.	Hindū, Khatri.	Sikhs.	Muhammādan.	Annual Outturn.
223	171	20	32	No estimate.

It should be here mentioned that the Municipal Committee of Amritsar, in order to encourage the art of wood-carving, has started a school in the city, where technical instruction is given. This is an example which other well-to-do Municipalities—Lahore, Delhi and Peshāwar—would do well to imitate.

3. Chiniot. The work done at Chiniot is perhaps the most refined as well as the most artistic carving executed in the Punjab, but detailed statistics, showing the economic state of the industry, are not available.

4. Bhera.—Mr. Kipling. The Bhera work, and the point in which it differs from that of Chiniot, are thus described by Mr. Kipling :—“ The Bhera work differs from that of Chiniot, in that the projectures are flatter,—pilasters and other details being often merely indicated in relief instead of a half or quarter section being imposed,—and the whole of the surface is completely covered with boldly outlined forms of foliage and geometric diaper made out, for the most part, with a V section cut. There is something rude and almost barbaric in this direct and simple mode of execution; but, though there is no attempt at high finish, the general design and proportions are so good, and the decorative scheme is so full and complete, that the technical imperfection of the work, as carving, is scarcely noticed.” The industry at Bhera, which, some years ago, was decaying is now very flourishing; the revival of the trade being due to the Indian Exhibition of 1885-86, where some samples of the Bhera work were awarded prizes and sold so well, that two of the artisans were induced to take up their residence in London, where they still ply their trade. The other workers at Bhera now turn out a regular supply for the English markets. The statistics are :—

No.	Caste.	Outturn.
80	Chobān Rājput.	Rs. 16,000.

25. The wages of skilled workmen range from 8 annas to 1 rupee per diem. Average prices for carved wood-work are from Re. 1-4-0 to Rs. 2 per square foot for deodar, and from Re. 1-12-0 to Rs. 2-8-0 per square foot for shisham. Door and frame in deodar cost Rs. 40 to Rs. 80 (Bhera); in shisham Rs. 164 (Chiniot). Carving on shisham is from 50 to 75 per cent. dearer than on deodar, as the hardness of the wood makes the labour more difficult.

26. The instruments, with the exception of the saws, are entirely of native make. They are as follows :—

(1) Rukhni, (2) teja, (3) chaursi, (4) sathri, (5) choppers of various sizes, (6) gol hira of sizes, (7) miangi, (8) kazak, (9) tundi chaursi, (10) tesha, (11) ari of sizes, (12) panda, daraz, &c.

27. The balcony is usually 8 feet in height and 4 feet in breadth. It is divided into three parts—the ‘pendí,’ or base; the ‘sidhára,’ or uprights; and the ‘gumbaz,’ or dome.

(ii) Balconies (búkharcha); window (bári.)

The búkharcha is shown in fig. IV in plan and elevation.

The names of the various parts in ordinary use among Punjab workmen are also given.

The cost of a well-carved balcony as described above is Rs. 90 for shisham, and about Rs. 55 for deodar.

Fig. V shows a common form of bári, or window, which does not require a special description.

28. Pinjra, or lattice-work, like the other form, of wood-carving, is essentially Muhammadan in origin. Mr. Kipling says:—  
 (iii) Lattice, trellis or pinjra work.—Mr. Kipling. Pinjra work.—Mr. Kipling, *Journal of Indian Art*. “Geometric tracery is a constant element in all Muhammadan designs, and it is applied to carpentry and wood-work as well as to carved or inlaid marble or decorative painting. The Punjab manj or pinjra work is similar to the lattice-work seen in Cairene ‘moucharabichs,’ while the geometric framed work in relief made for ceilings is almost identical with the ceilings of Cairo. The Arab variety, which has the lattice bars in turned balls and over lattice-wrought forms is, however, unknown in the Punjab. Panels wrought into these forms have great decorative value in a composition of light and shade in wood-carving, from their effect of richness and repose.”

The pinjra is usually made of shisham. It may consist of as many as 2,000 separate pieces: these are joined together by a process of dowelling without the assistance of glue, the whole being held together by the frame. This species of work is very lasting, and, contrary to probabilities, the lattice-work holds together even after the frame has been broken or destroyed. “These geometric patterns are also cut in relief, and sometimes incised in deep line, but seldom perforated like the grilles inserted in pianoforte fronts.”

Pinjra work is carried on at all the great centres, but only at Chiníot and at Pesháwar is the work specially remarkable. At both these places the demand has diminished greatly, and will probably continue to do so.

A panel of well-worked lattice 3 feet by 1½ feet will cost as much as Rs. 13, or somewhat over Rs. 3 per square foot. The figures for the industry are:—

No.	Caste.	Outturn.
160	Awán, &c.	Rs. 2,500

Pinjra work is exported from Pesháwar to Kábul, it is said, in considerable quantities. The wages is reported to vary from annas 12 per day in Jhang to Re. 1 in Pesháwar, but these comparatively high rates must be discounted by the fact that the artificers do not receive regular and uninterrupted employment owing to the decreasing demand.

#### E. LACQUER-WORK, TURNERY, AND KAMÁNGIRI.

29. The kharádi (turner) is found in every town and large village.  
 (a) Punjab turnery and lacquer-work. His work is to be seen in every villager's house. Much of his work is crude in design and colour, and rough in execution, but it improves *pari passu* with the increase in refinement and wealth of the purchasing public: thus the manufactures of the city turners are in general better in quality than those of his village brother; and in the five towns mentioned below he exhibits a delicacy of touch, a sense of colour, and an elegance in design, which goes far to raise the trade to the dignity of a fine art:—

Table of Turners arranged according to Divisions.

Divisions.	Caste and Got.	Hindu.	Muhammadan.	Total.	Average daily wages.	Outturn.	Places.
					Annas.		
Delhi ...	Sheikhs, Khális, &c.	13	333	346	4 to 8	39,500	None.
Jullundur ...	Tarkhán Dumnah, Jhiwár, Rájpút.	27	594	621	6 to 8	1,20,381	Hoshiárpur.
Lahore ...	Khokhar, Dhaman, Siawán, &c.	140	646	786	4 to 8	86,800	Pákpattan.
Ráwalpindi ...	Tarkhán, Sikh ...	200	625	825	5 to 7	85,000	Shiwál.
Pesháwar ...	Awán, Afghán ...	...	156	156	6 to 12	12,750	Pesháwar, Maira.
Deraját ...	Bhatti, Chogatta ...	...	276	276	4 to 8	42,000	D. I. Khan.
	Total ...	380	2,630	3,010	6	3,86,431	

30. The turner's instruments, detailed below, are rough and primitive, and are mainly country-made. In common with the rest of the tarkhán class, however, he is slowly finding out the merits of English steel, and one frequently finds that his chisels, saws and files are of English manufacture.

Implements.

- (1). The lath (adda) consists of two iron bars (killa), one fixed in the ground, the other to be adjusted for distance. On the inner side of each bar is a spike to which the block of wood to be turned (mochha) is attached. Between this block and the adjusting bar and over the spike is fixed a cylindrical peg (chari), round which the thong of the bow (kaman) is once passed. The bow is worked backwards and forwards, and thus imparts the necessary rotatory motion.
- (2). Nán, nihán, heavy chisels for the operation of rough clearing the wood.
- (3). Mathna, a light chisel.
- (4). Addi, the rest for the chisel.
- (5). Buraki, a pointed chisel for grooving.
- (6). Sathra and sathri, narrow-edged chisels of sizes.
- (7). Chúrna, rachi, roda, an iron bar, ends flat bladed, and edges sharp for separating the cylinders, &c.
- (8). Bomkinja or patra for cleaning out the inside of vessels to be turned hollow.
- (9). Tesha, the adze.
- (10). Varma, the drill.
- (11). (Ari) saws and files (reti).
- (12). Rangata, the polishing stick, &c. The woods used are shisham and poplar.

31. After the articles have been turned to the required shape on the lath, the colour is applied by pressing sticks (batti) of coloured lac to the revolving surface. Sometimes two or three colours are laid on in patches to produce a mottled or marble ground (Dehra Ismail Khan). Borders are usually made in two or three colours superposed, and the pattern is etched with a chisel. When colours are superposed, the invariable order is first red, second green, and third black. The coating of colour is rendered even by means of the polishing stick, a piece of bamboo, or the midriff of a palm leaf. To produce a pattern in green the black is scraped through, for red both the green and black are scraped away, and for white the wood itself is exposed. The lac stands well the extreme heat of the sun and the damp of the rains, but cannot be compared in these qualities to Japanese lacquer-work.

32. The colours are mostly mineral. Yellow is made with orpiment, green is the arsenite of copper, red with red-lead or vermilion, blue with lájward or Prussian-blue, black with lamp-black.

The usual method of manufacture is as follows:—

*Yellow.*—Quarter seer shellac and 2 chitáks sulphide of arsenic (hartál); pound the latter in a mortar, mix the shellac in, and, warming gently, mount the mixture on a stick, cool, and take off the pigment and roll it into a cylinder (batti).

Colour sticks (batti).

*Red.*—Quarter seer shellac and  $2\frac{1}{2}$  chitáks of vermilion; treat with water and pound for several hours, dry and mix with shellac and proceed as for yellow.

*Green.*—One chiták yellow; warm and mix one tola of indigo and proceed as before.

*Black.*—Quarter seer shellac and 2 chitáks lamp-black, &c.

*Blue.*—Quarter seer shellac and 2 chitáks carbonate of lead; pound and mix indigo, &c.

*Lájward.*—Quarter seer shellac, 2 chitáks white lead, and 4 tolas bottle colour (ajaib rang); warm shellac gently, mix the two other ingredients slowly, &c.

Centres and local peculiarities.

33. The following places may be regarded as centres of the trade :—

- (1) Sáhiwál (Shahpur District).
- (2) Dera Ismail Khan.
- (3) Pákpattan (Montgomery).
- (4) Ferozepore.
- (5) Hoshiárpur.
- (6) Jullundur.

Place.	Caste.	Hindu.	Muhammadan.	Total.	Outturn.	Articles for which famous.
Sáhiwál ... ..	...	...	73	73	8,000	(Fig. for District).
Dera Ismail Khan ... ..	...	...	66	66	18,000	
Pákpattan ... ..	Dhaman, Khokar ...	...	122	122	...	
Ferozepore ... ..	...	...	...	1	...	
Hoshiárpur ... ..	Dumrah, Jhiwár ...	13	309	322	46,728	
Jullundur ... ..	...	...	...	285	33,653	

Sáhiwál lacquer-work, as compared with that of other centres, is rough and crude. It is, however, characterized by great freedom in design. Aniline dyes are much used, an aniline mauve being peculiarly unpleasant. The work done in two colours is most effective.

The Dera Ismail Khan work is unique in character, very few colours are employed, and the pattern is usually of fern-like scrolls of almost incredible minuteness and delicacy of execution, mostly wrought or scratched by women. The caskets, tables, &c., are lavishly ornamented with ivory studs, flowers and similar ornaments.

Pákpattan articles are remarkable for solidity of surface and design.

At Ferozepore, the work of an old pupil of the Mayo School of Art is skilful in execution and artistic in design. He uses the farásh (*Tamarix orientalis*), and not, as elsewhere, the shisham and poplar. His work is the best of the kind in the Province, but it is very high in price.

The Hoshiárpur lacquer-work differs from that of Pákpattan in the use of metallic tin ground under transparent colour, and, in addition to the scratched work of colour, figures of a mythological character are boldly pointed and covered with transparent lacquer. The brilliance in colour is secured by the use of aniline dyes, which are used to effect the same object at Dera Ismail Khan and at Sáhiwál. "Another peculiarity is the scratching of lines of ornament or figures in one colour of lac, and then filling the lines with another colour, the whole surface being made smooth. This is the method followed in Burmah, only the lac is applied on basket-work, and not on wood. Rude figures of divinities are freely introduced, and larger pieces are attempted here than elsewhere. Little care is, however, taken in the selection of the wood," &c. Compare Japanese or true lacquer-work also with the Hyderabad work, for which see *Art Journal*, page 47.

34. The turners as a class, as a rule, are badly off, and their wages are low —on an average 5 annas 6 pies per diem. Some members of the class, however, as those enumerated in the table of turnery centres, are very well off. These do not, as a rule, work for wages, but manufacture to order; the profits of the trade being probably not less than 25 per cent.

35. The following are the chief articles manufactured by the turners, with the range of prices for each article :—

Names of articles manufactured.	Price.		Remarks.	
	Rs. a. p.	Rs. a. p.		
Bridal chairs ... ..	10 0 0	to 30 0 0	Lacquered and elaborately orn studs of ivory.	
Pirā ... ..	4 0 0	„ 8 0 0	Low square arm-chair, favourite colours, red with black or yellow bands.	
Pirī ... ..	2 0 0	„ 5 0 0	Stools.	
Bed-legs ... ..	4 0 0	„ 8 0 0	D.I.K. 20	Sometimes lacquered, usually painted and covered with transparent varnish.
Walking-sticks ... ..	0 2 0	„ 0 8 0		1
Wheels ... ..	4 0 0	„ 8 0 0	10	Often elaborately ornamented with ivory.
Toys ... ..	1 4 0	„ 2 0 0	per doz.	Dolls, tables, cups, saucers, plates, &c., model mills and toys of other and strange shapes.
Boxes ... ..	8 0 0	„ 2 0 0	D.I.K. 4	With round dome-shaped tops.
Chess-boards and tables ... ..	7 0 0	„ 10 0 0		Highly effective, and price moderate.
Teapots ... ..	7 0 0	„ 10 0 0		
Plates ... ..	...	...	4	
Ornamental vases ... ..	0 4 0	„ 1 8 0		Some elegant designs introduced by Colonel Corbyn at Sāhiwāl.
Surāhi ... ..	0 8 0	„ 5 0 0		
Guldān ... ..	1 0 0	„ 5 0 0		
Kharbūza ... ..	...	4 0 0		
Cigar-cases ... ..	...	4 0 0		Dera Ismail Khan.

36. The Kamāngar's art is fast becoming a thing of the past. There

(b) Kamāngiri.—Mr. is no longer a demand for the bow and the quiver, on the Kipling, decoration of which he used to exhaust the resources of his art, and only here and there is there any demand for surface decoration on wood. The native practice is to cover the ground either with cloth or some fibre, mixing whiting and glue, or, in some cases, to use the fibre for stopping crevices only. Over this sheets of tinfoil are pasted, and on this metallic ground designs are painted in water-colours, some of which, when varnished, are transparent. The varnish, too, is often yellow, and thus such portions of the tinfoil as are left become golden, while transparent blues, &c., are lighted through with a metallic sheen. The work still survives in a fitful fashion. It probably originated from the necessity of closing the pores of wood so as to prevent resinous exudations from blistering the work during the summer heats—a precaution which is only partly successful.

The bows are generally made from horn and bamboo. The largest trade seems to be at Muzaffargarh, which exports over Rs. 1,000 worth annually to the frontier districts, where the use of the bow is still retained. The price of a single bow varies from Rs. 4 to Rs. 8. The number of men engaged in the craft is—

Hissār ... ..	...	...	...	...	...	...	...	...	8
Muzaffargarh ... ..	...	...	...	...	...	...	...	...	20
Hoshiārpur ... ..	...	...	...	...	...	...	...	...	13

NOTE.—1. The use of aniline dyes is much to be deprecated; these colours are glaring and crude, and are utterly destructive of artistic effect. They soon lose their original brilliancy, but their cheapness is unfortunately making them increasingly popular.

2. The actual number of artistic workers is very small, only a few families in each centre. Jullundur is an exception to this, the turners there being considerable in number and annually turning out a large quantity of work, but the artistic value of the Jullundur work is comparatively low.

3. The great obstacles to artistic progress in the trade are,—1st, the conservatism of the workmen; 2nd, the taste (for the most glaring colours) of their largest customers, the banya class; 3rd, the tendency in European purchasers to make them merely copy European models and designs.

4. It is required to show the turner the best designs and models, and then to assist him in finding a market for his goods. It would probably be advantageous to start local loan museums at the great centres, which the Mayo School of Art would furnish with models, &c., executed after the best native designs, &c. Take, for example, Hoshiārpur: the local museum would contain not only this local wood, brass, inlaid and lacquer-work, but would also have examples of models after the best and purest designs executed in other parts of the province and of India.



37. Small articles of domestic use—*e. g.*, pen-boxes, trays, &c.—are made commonly throughout the province, the chief centres being Delhi, Lahore and Jullundar.\*

The prices of common work are as follows :—

Names of things.	Prices.	Names of articles.	Prices.	Names of articles.	Prices.
	Rs a. p.    Rs. a. p.		Rs. a. p.    Rs. a. p.		Rs. a. p.
Bow and quiver ...	...	Spear shaft ...	...	Ceilings ...	0 8 0 per sq. ft.
Kalamdán ...	0 8 0 to 2 8 0	Teapoy ...	5 0 0 to 15 0 0	Letter-racks ...	0 8 0 to 1 8 0
Book-stands ...	1 0 0 „ 3 0 0	Trays ...	0 4 0 „ 10 0 0		
Bows, Muzaffargarh...	4 0 0 „ 8 0 0				

#### F.—FURNITURE.

38. The furniture in an ordinary native house is simple in the extreme, consisting only of a bed, a low with high-back chair (*pirâ*), and a stool (*pirî*). If the owner be rich there will also be carpets and masnaqs, &c. The houses of the educated classes are furnished more in conformity with European ideas.

The making of bed-legs is a very considerable industry, and considerable ingenuity is expended on their decoration. They are turned on the common lathe, and afterwards painted, varnished or lacquered, and ornamented with ivory knobs. The price ranges from as. 4 to Rs. 12 a set (for the double pair).

The “*pira*,” or chair, and the “*piri*,” or stool, are often elaborately ornamented; the method of manufacture is the same as for bed-legs. Some of the better class are even pretty to look at, and the brilliant colours, chiefly red and yellow, with which they are adorned certainly lights up the gloom of a native room. The district returns give the following figures; but it must be remembered that the turners as a class, para. 29, also turn out the same articles, so that a certain indefinite amount of their total outturn must be credited to native furniture :—

Engaged in bed-leg and *pira* manufacture { Hindu ... 311 } Total 509.  
 { Muhammadan ... 198 }

39. Furniture after the European pattern is made in every district station and in every cantonment. The larger the station the better the prices, and the better the class of workmen. Given a pattern, a very fair imitation will be turned out. Chairs, small tables and almirahs, &c., are done well, but large tables are seldom well finished.

40. The best known centres of the trade are Gujrât and Kartârpur in the Jullundur District. Gujrât is chiefly famous for its manufacture of chairs. The trade was started by a former Deputy Commissioner, Mr. Capper, who gave his name to a particular form of camp-chair, and his successors—Colonel Parsons, Colonel Harrington, and Mr. Wilkinson—each introduced different varieties. The trade is now on a permanent and secure footing; and though the Deputy Commissioner reports that the work is deteriorating in quality, owing to heavy competition with outsiders and the paucity in the demand, the Gujrât manufacture is as popular as ever. The annual outturn is about Rs. 4,200, of which Rs. 2,800 is said to be exported to other districts. The material employed is chiefly shisham, of which there is an abundant supply: and this is probably the reason why the industry has become localised in the district. The prices vary from Rs. 24 for the most elaborate form of easy-chair, brass bound and covered with leather, to Rs. 3 for the ordinary. Camp-chairs and good dining-room and office chairs cost Rs. 6.

\* What is popularly known as Kashmir papier-maché work is often done on wood and made in the Punjab.

41. The Kartárpur industry is similar to that of Gujrát, except that the artisans are Hindús, while in Gujrát they are Musalmáns. Fifty-two men are occupied in the manufacture of arm-chairs, tables, desks and office-boxes, the annual outturn of which is estimated at Rs. 7,300.

42. At Simla a trade in furniture carved in walnut-wood has grown up of late years. The workmen are mostly Sikhs from the adjacent plains. The fret-saw cutting, which once enjoyed a slight popularity in Europe, is imitated, and Swiss brackets, clocks, &c., carved in wood, have furnished some models.

Very good furniture is also turned out at Hoshiárpur, but the prices are high.

43. The number of workmen employed in the manufacture of European manufacture at the chief centres are :—

Ráwalpindi	...	...	40	} Exclusively English furniture.
Amritsar	...	...	40	
Lahore	..	...	100	
Gurjât	...	...	44	
Siálkot	...	...	50	} Also do inlaid-work.
Hoshiárpur	...	...	106	
Jullundur	...	...	57	
Simla	...	...	58	

The total for the province is 1,230, and the value of the furniture the workmen turn out annually may be estimated at between 1½ and 2 lakhs of rupees.

44. The inlaid-work is also of Muhammadan origin, and was probably introduced from Arabia. In the Punjab the chief centres are Hoshiárpur, and Chinót in Jhang.

The wood inlay-work of Hoshiárpur has a high provincial reputation, and is capable of indefinite extension. The extension of this trade to articles of European use is mainly due to the efforts of Mr. Coldstream, C. S. For many years "qalamdâns" or pen-cases, walking staves, mirror-cases, and the low chouki or octagonal table common in the Punjab, and probably of Arab introduction, have been made here in shisham wood and inlaid with ivory and brass. The patterns were very minute, and covered nearly the whole of the surface with an equal spottiness. Mr. Coldstream procured its application to tables, cabinets and other objects, and during recent years a trade has sprung up which seems likely to grow to still larger proportions. It is probable that in future the most profitable field for the Hoshiárpur inlayers will be, not so much in the production of finished articles for European uses,—in the devising of which the native workman is obviously placed at a great disadvantage by his complete ignorance of Western usages,—but in the production of panels and details to be afterwards worked up by European cabinet-makers. The fault of the inlays is a certain triviality and insignificance of design, and its too equal and minute distribution. At various times some of the inlayers have visited Lahore, and have been shown at the School of Arts examples of good Arabic and Indian design, and they have been furnished with sketches. When the blackness and ugliness of an Indian village are considered, it is really matter for surprise that decorative invention survives in any form. An effort is now being made by one of the leading London firms of importers to introduce the Hoshiárpur inlay more fully to the best market. The ivory used is generally the waste stuff left by the turners of ivory bangles, and is worth from Rs. 2 to Rs. 4 per seer. It is frequently alleged that bone, especially camel-bone, is used as well as ivory, but both ivory comb-makers and turners make a good deal of waste, which is quite large enough for the small details of the inlay.

Black-wood, the old "hearth-wood" (*Diosporos tomentosa*), incorrectly called "abnus" or ebony by the workmen, is used both as a ground and in combination with ivory as an inlaying material, especially in the familiar herring-bone pattern. Brass is also employed, but with less effect; for, when foliated work in small patterns is worked in brass, it is necessary that the metal should have a better surface than it generally receives in the Hoshiárpur work.



45. The brass inlay of Chiníot is superior to that of Hoshiárpūr in design and in finish. Here the strips of brass are not, strictly speaking, inlaid, but rather laid on, and are retained in their place by the nails. The slightest warp in the wood is fatal to the effect, for the brass at once bulges up, and is not readily smoothed down again. The designs are strictly of Muhammadan type, such as may be seen in mosques and tombs all over India, and have less originality than the floral combinations invented by the Hindu carpenters of Mainpuri, North-Western Provinces. (See Mr. Growse's articles in *Art Journal* of 1887, para. II.)

<i>Prices of inlaid-work.</i>				Rs.
Hoshiárpur—Almirahs	...	...	to	80
Inlaid tables	...	...	to	28
Do. chairs	...	...	to	40
Native choukís	...	...	to	32
Qalamdāns	...	...	to	10
Looking-glasses	...	...	to	10
Teapoys	...	...	to	10
Boxes	...	...	to	10

Jhang (Chiníot) Rs. 6-6-0 per square foot.

46. From Hoshiárpūr there is an export trade amounting to over Rs. 5,400 annually in inlaid-work. It is chiefly sent to Bombay and Calcutta. Rupees 10,000 worth is exported to other districts of the Punjab. The total number of workers is 106, and the value of the work they turn out annually is about Rs. 18,000. The average wages is 12 annas per diem. The figures for Jhang are not given, but the industry there is on a lesser scale than in Hoshiárpūr. The outturn is probably not more than Rs. 4,000 annually

#### G.—CARRIAGE BUILDING.

47. The common forms are fully described in Mr. Baden-Powell's *Punjab Manufactures*, Vol. II., page 246.

Carriage-building—  
(a) Native.

They are as follows:—

- (1) The bullock-cart (gári or gadá), drawn by two, three or four bullocks;
- (2) The one-horse cart (ekka) and veri (for goods);
- (3) The baili or ekka drawn by two bullocks;
- (4) The rath used towards Delhi, a baili with richly ornamented dome.

A cart with two bullocks will carry 20 maunds and do 15 miles a day.

A cart with three bullocks will carry 30 maunds and do 15 miles a day.

A cart with four bullocks will carry 40 to 45 maunds and do 15 miles a day.

The woodwork is of ber, kikar, tūt and shisham, all heavy and strong woods. For the construction of these conveyances, see Baden-Powell, pages 246 to 250. The usual prices are:—

	<i>Price Rs.</i>				
Ekka	...	...	...	...	30
Cart	...	...	...	...	20 to 80
Rath	...	...	...	...	200

48. Carts are turned out everywhere; ekkás at Amritsar and Jandiála, and also in many other large towns. Trade in them is small. In Delhi, raths are largely turned out, there being considerable demand for them among Hindús on ceremonial occasions. The number of workmen employed is approximately as follows:—

	<i>Number employed.</i>				
Carts and ekkas	...	...	...	...	2,159
Rath	...	...	...	...	51
Wheel-wrights	...	...	...	...	120

No figures for particular centres are available.

49. European forms are coming into vogue, not only in the large towns, but in the districts also. Those who can afford the cost prefer the easy-running tum-tum or phaeton to the old ekka

(b) European.

or rath. The woods employed are 'tút' and 'shisham.' Native-made English carriages are, in general, clumsily and coarsely made, and, even if elegant in shape, are always found wanting in finish. The axle boxes are always English. The painting or varnishing is done in a very rough way. The average tarkhán has no idea of getting a polish on his work. He thinks a couple, or at most three, coats of paint daubed on the carriage quite sufficient for all practical purposes (*see* Mr. Kipling, *Indian Art Journal*, 1887), and he does not allow a sufficient interval between the different coats.

Carriages are turned out in all the large cantonments and cities, but the Lahore work alone is worthy of remark.

	Prices.		Rs.	Rs.
Ráwalpindi—Dog-carts	...	...	200	
Wagonette	...	...	400	
Phaeton	...	...	500	
Lahore—Dog-carts	...	...	100	to 350
Shigram	...	...	200	
Phaeton	...	...	400	
Amritsar—Tum-tum	...	...	20	„ 80
Shigram	...	...	175	„ 200

In all 152 artisans are employed in construction of European vehicles, chiefly in Lahore, Amritsar, Ráwalpindi and Siálkot. No reliable figures as to the total annual outturn are forthcoming, but it may be estimated at Rs. 25,000 per annum. The best work is done by a European firm in Lahore employing native artisans—Sikhs; but in every large cantonment there are one or two building firms, most of whom also turn out furniture on the European model.

#### H.—BOAT-BUILDING.

50. Boat-building, which was so important an industry in former years when one of the principal means of communication was by water, has rapidly declined since the extension of Railways. Native boats, as a rule, are clumsy in construction and primitive in all their details.

They may be classified as—

Kinds.

- Beri* takes cargo up to 1,000 maunds. These differ only in breadth of beam and length. They are used on the Rávi, Chenáb, Jhelum and Indus. They are built of 'diár' on the Punjab rivers, and of teak on the Indus; at the stern is the cabin for the boatmen.
- Zarak* on the Sutlej is higher in build than the *beri*, and often has a chupper or booth on the deck for a cabin.
- Kishti*, punt, with the prow tilted and pointed (made of chil, kikar or deodár).
- Varieties: (1) *Dondi*, the bow makes an angle of 30° with the water, the stern double that angle; (2) *Yourik*; (3) *Dugga*.

The sterns and cabin arches are usually ornamented with wood-carving.

The decoration is incised and painted bright red, or green or white, which has a pretty effect when seen at a distance.

51. Boat-building is carried on to a greater or less extent in the following places:—

Prang in the Pesháwar Division; Attock, Jhelum, Pind Dádan Khan, Khusháb, and Wazirabad in the Ráwalpindi Division; Lahore in the Lahore Division; Rupar in Umballa; and Muzaffargrah.

#### Figures and Prices.

	No. employed.	
Jhelum	...	40 Muhammadan.
Khusháb	...	10 Do.
Prang	...	28 Do.

The total for the province is 300 approximately. Prices for large boats, Rs. 200 to 600; small boats, Rs. 20.

Boats after the European fashion can be made to order at Jhelum, but the workmanship is rough and the cost great.

The trade, from the nature of things, is very languishing, as the competition of the Railway is gradually attracting all the carrying-trade. The artisans, however, have turned themselves to other branches of carpentering.

### I.—MUSICAL INSTRUMENTS, &c

52. An elaborate description of the various musical instruments in vogue in the Punjab, with details of their manufacture, &c., will be found in Baden-Powell's *Punjab Manufactures*, page 272. It will be sufficient to give their names here with the English equivalent when possible:—

- |                                       |                             |
|---------------------------------------|-----------------------------|
| 1. <i>Sárangí</i> or fiddle.          |                             |
| 2. <i>Tumbura</i> or guitar.          |                             |
| 3. <i>Sítár</i> , a variety of No. 2. |                             |
| 4. <i>King</i> ,                      | } One-stringed instruments. |
| 5. <i>Yaktára</i> ,                   |                             |
| 6. <i>Sarod</i> ,                     | } Six-stringed.             |
| 7. <i>Rabáb</i> ,                     |                             |
| 8. <i>Bansiri</i> , bamboo flute.     |                             |
| 9. <i>Bín</i> .                       |                             |
| 10. <i>Shurnaos</i> , or bagpipes.    |                             |

The instruments and others which I have not mentioned are made by a special class of artisans. There are generally a few in each district, driving a desultory trade, and only making the instruments to order.

53. At Amritsar City 26 hands are employed, at Hoshiárpur 12, Mooltan 9, Bhera 6, Jullundur 3. The wood used is tûn or walnut. The bodies of the instruments are made of the great gourd (*Cucurbita maxima*) and the bottle gourd (*Cucurbita lagenaria*). The prices vary according to the elaborateness of the instrument and the extent to which it is decorated. The wages are from 6 annas to 8 annas per day. The tools used are those of the ordinary carpenter, but capable of doing smaller and finer work. Of the annual outturn no reliable information is forthcoming. The industry is a scattered and straggling one.

54. The information as to the miscellaneous branches of wood industry not treated of in the foregoing paragraphs is of the most meagre kind. Few of the district reports have any reference to them, and where such a reference is made the remarks are taken almost direct from Mr. Baden-Powell's work. Only a few of the most noteworthy can here be treated of.

Five hundred and sixty-five workmen are employed. Their wages vary from  $3\frac{1}{2}$  to 6 annas per day. The manufacture is chiefly carried on at Amritsar, Lahoré, Dera Gházi Khan, and Shahpur. In Amritsar the trade is particularly brisk, owing to the demand for combs among the Sikh community; and 2,880 combs, valued at Rs. 75, are said to be turned out daily. The woods used are (kahu) wild olive and chikri, which are found locally, and the former is also imported from Kálábagh on the Indus, from Jhelum and Ráwalpindi, where it sells for 3 maunds per rupee. The only instruments required are a saw, a láthi, and cold chisel. A skilful workman can turn out 20 to 30 combs per day. These sell at prices varying from one pice for the ordinary kinds used by men to 2 annas for the more elaborate ones worn by women, which are often silvered over with the substance known as kallai. The wages vary from 3 to 5 annas per day. The annual outturn is valued at

3 lakhs of rupees per annum. This industry is generally worked by Hindu capitalists, who supply the raw material and dispose of the manufactured articles. The artisans are often hopelessly in debt to them.

55. This is a scattered and straggling industry, occupying a large number of the menial classes, not regularly or permanently, but helping them in a desultory way to eke out a subsistence. The number of the workmen is returned as 3,261, but it is probably much more, and their principal castes are Chamárs, Sáisís, Baharupia, Musalís, and other waifs and strays on the outskirts of society. Baskets of the smaller kind (tokrís) are made from the cotton plant and from the twigs of the mulberry. The large round baskets known as 'kháris' are made from the tall strong grass called 'sarkána,' secured by thongs of leather or deer-skin. A very handsome kind is the large painted and box-shaped basket used in native houses to keep clothes and ornaments. These are generally made fast with thongs of leather, and cost as much as Re. 1 to Rs. 2. They are called 'touns.'

In the Simla Bazár, basket-making is carried on as a regular occupation, and 32 hands are permanently employed. They are paid at the rate of 5 annas a day, or rather their earnings come to that sum on the average. The ordinary menials employed on this work do not make more than  $1\frac{1}{2}$  to  $3\frac{1}{2}$  annas.

56. The artificer of these is known as "nechaband," and is found in every town. The hollow bamboo is used for the stem and mouth, and the hollow reed (nari) for the tube which supports the chillum or bowl. The method of manufacture is described in *Punjab Manufactures*, page 302. Delhi and Amritsar are the places where the work is carried to the greatest perfection. In the former there are 19, and in the latter 27, Muhammadan tarkháns permanently employed, and they are said to earn 5 to 7 annas per day.

57. Walking-sticks are made all over the province, the best at Bhera, Pákpattan, Hoshiárpur and Amritsar. The industry is not a special one, being carried on by the Lohárs and turners in wood. The sticks are frequently lacquered or ornamented with ivory. Bamboo and wild olive are the woods most commonly used. The latter takes varnish and lacquer best. The walking-sticks made at Bhera are fitted with a crutch of translucent stone resembling jade, said to be imported from Bokhára.

58. This industry is rapidly growing with the increasing popularity of cricket all over the province. The most important centre of the industry is Siálkot. But in Amritsar, Gujráat and Ráwalpindi a trade is gradually springing up owing to the demand. At Siálkot 100 workmen are employed in 30 firms, and turn out tennis, badminton and cricket bats to the value of Rs. 15,000 annually, of which Rs. 10,000 is exported to other provinces, and Rs. 5,000 to the other districts of the Punjab. The trade is a most flourishing one, and the workmen earn 8 and 10 annas a day. The wood employed for the bats is walnut or ash, and for the stumps mulberry. Badminton bats sell from 8 annas to Re. 1-8-0, tennis bats from Re. 1-8-0 to Rs. 4, and cricket bats of seasoned walnut wood from Rs. 3 to Rs. 6. The Amritsar cricket bats are said to be the best, and there are now two firms in that city which turn out only cricket bats.

59. These are made in every district, the wood and iron work being executed by the same person. From Miánwáli in Bannu, and Pindi Bhattián in Gujránwála, there is an export of these articles to the extent of Rs. 500, but the trade must suffer, as saddles of the English pattern displace those of native make. Farásh and kikar are the woods most commonly used.

60. The manufacture of these is carried to greater elaboration in Jhang and the Deraját, where camels are commonly used for riding. The wood employed is shisham; but this represents but a small proportion of the cost, as the saddle is decorated with brass

plates covered with delicate tracery, and the wood-work is inlaid with brass. Some of these saddles which are made to seat two persons cost as much as Rs. 100.

61. Miscellaneous articles—such as toy-boxes, chessmen, pen-boxes, pencil-boxes, shuttle-cocks—are made generally throughout the province, and especially in the large cities—Lahore, Amritsar, Delhi and Mooltan—where there is a large and steady demand. They are mostly lacquered or inlaid, and so come within the scope of the lacquer-work, inlay and wood-turning that have been already described. Hoshiarpur and Pakpattan produce the best toys, and from the former city there is a considerable export down country.

62. Appendix I gives information as to different kinds of wood employed in the manufactures described, whether imported or grown locally, with the different uses to which they are put. Appendix No. II gives, in a tabular form, the statistics for each district and division, so far as they could be compiled from the district reports.

M. F. O'DWYER,  
*Assistant Commissioner, Shahpur.*



# APPENDIX No. I.

## W O O D.

### ALPHABETICAL LIST OF TIMBER TREES.

[Stewart—Punjab Plants. Brandis—Punjab Forest Flora, etc.]

#### (a) TIMBER TREES.

- Acacia Arabica* (*Kikar*; in North-West Provinces, *babul*). Found plentifully south of the Salt Range. Reaches 30 inches in girth in 10 or twelve years. Germinates easily. Sap wood liable to the attack of white ants. Heart wood less liable to attack of insects, is dark-colored reddish, hard, strong and heavy, weighing 70 lbs. per cubic foot green and 40 lbs. dry.  
*Use*.—Much used for parts of boats, well-curbs, cart-axles and wheels, Persian wheels, sugar-rollers, the portion of the plough above the share, roofing, &c.
- A. catechu* (*Khair*) ... Found in the Sewálíks up to 3,000 feet. Timber dark colored, hard, heavy, brittle, and not liable to the attacks of insects.  
*Used* for pestles, sugar-crushers, cotton-rollers, weavers' beams, shafts of ploughs, axles, &c.
- A. modesta* (*Phuláí*). ... Indigenous in the Salt Range, the Bári and Jullundur Doábs and in the north-west of the Province. Wood dark brown or nearly black, hard, strong and heavy, weighing 53½ lbs. cubic foot dry.  
*Used* for cart-wheels, sugar-mills, Persian wheels, the mallets for cleaning cotton, &c.
- A. speciosa* (*Sirin*, *Siris* *Siri*). Indigenous in the Himáláyas from the Indus eastward. Cultivation on the plains probably introduced since the annexation. Is easily raised from seed, and grows much quicker than the shisham. Heart wood dark, heavy and strong; if properly seasoned will not warp or crack.  
*Used* for ordinary constructive purposes (the Hindús in Kángra, however, consider it unlucky), for mortars, for oil-mills, for well-curbs, and for parts of boats, &c.
- Acer cultratum* (*Tilpattar*). Found in the Himáláyas from 4,000 to 10,000 feet. Wood close grained and strong.  
*Used* in Kángra for ploughs, bedsteads, and jámpán poles. (The maple is exported to Tibet.)
- Aegle marmelos* (*Bel*) ... Found below Simla up to 4,000 feet. Wood whitish, clean grained, hard and strong. (Sacred to Shiva.)  
In Pesháwar snuff-boxes for Afgháns are made from the shell of the fruit.
- Bassia latifolia* (*Mahwa*) ... Found in the Sewálíks as far north as the Rávi. Wood cinnamon colored, close, hard, heavy and durable.  
*Used* for building purposes in Kángra, &c.
- Betula Bhojputra* (*Bojputra*, *Bhuj*). Found in the Punjab Himáláyas from 7,000 to 11,500 feet. Wood valueless.  
*Use*.—The bark is exported to the plains for wrapping round Hooka tubes.
- Bombax heptaphyllum* (*Sembaí*). Found throughout the Sewálíks up to 3,500 feet; moisture renders the wood more durable. Is used for well-curbs (*nímchaks*), conduits, troughs and bridges. Also is made into scabbards—Kángra and Yusafzai.
- Capparis aphylla* (*Karil*). Is characteristic of the Punjab, found in dry sandy tracts. Wood durable and bitter, said not to be attacked by white ants.  
*Used* for fuel and the rafters of small buildings. Plough-shares are made of it in Dera Gházi Khan, and in Jhelum it is used for turning.
- Cedrela toona* (*Tun*) ... Found in the Sewálíks and also on the plains. Wood darkish, not subject to worm or warp, and takes a high polish. Much used by cabinet-makers. The hoop of sieves are made from *C. T. var Serrata* (*Dawal*).
- Cedrus deodara* (*Diár*) ... Grows in many parts of the Himáláyas from the Ganges to the Indus; also in the Saffed Koh. Probably is identical with the cedar of Lebanon. Found from 4,000 to 10,000 feet. Wood very durable, easily worked, of a yellowish color, straight grain, and highly resinous, which preserves it from the attacks of insects. Takes a high polish.  
*Use*.—Universal. Cabinets, tables, roofing, doors, &c., are manufactured from it.
- Conocarpus latifolia* (*Dhau*, *chál*). Found in the Sewálíks up to the Rávi. Wood strong and durable.  
*Used* for implements, beams, &c.
- Dalbergia sissoo* (*Táli*, *shisham*, *sisso*). Found in the Himáláyas from 2,000 to 3,500 feet. Cultivated universally on the plains. Heart wood dark bay, hard and of great durability. Weight 68 lbs. per cubic foot green. Is not attacked by white ants.  
*Used* for furniture, building boats, boxes, camel saddles, &c.
- Elæodendron roxburghii* (*Merandú*). Found in the Sewálíks up to the Rávi. Wood white and brittle.  
*Used* for small wood-work.
- Eublicia officinalis* (*Aoula*). In the Sewálíks up to 3,000 feet. Wood hard, strong, straight grained but brittle.  
*Used* for gun-stocks, door-frames, well gear, &c.
- Fluggea virosa* (*Girkbáta*). Found in the Sewálíks, Salt Range and Trans-Indus. Wood close grained and strong.  
*Used* in the construction of the loom.
- Fraxinus floribunda* (*Sám hám sinnu*). Found sparingly on the plains. Wood possesses most of the qualities of the English Ash. Valued for jámpán poles, ploughs, platters, spinning-wheels, and in Kashmír is largely used to make oars.
- Grewia elastica* (*Dhamman*). Found in the Salt Range and Sewálík tract below Kángra; timber strong and elastic.  
*Uses*.—Sticks, bows, bangi poles.
- Juniperus excelsa* (*Chaldí skulpá*). Found in the Himáláyas above 8,000 feet. Much used in Lahoul, Ladákh, &c., and is said to be in some request for boxes at Simla.
- Lagerstraemia parviflora* (*Bákli*, *dhaura*). Common in the Sewálíks. Its timber is yellowish, elastic and tough.  
*Used* for agricultural implements, and in the North-Western Provinces for buggy shafts.
- Mangifera indica* (*Am*; *amb*). Is common up to Lahore; is also cultivated further north. Wood used for packing cases.
- Michelia Champaca* (*Champa*). Found in Kángra, Chumba, &c. Wood hard, takes a high polish, and is not subject to worms or liable to warp.  
*Used* for furniture, verandah posts, &c., &c.
- Morus alba* (*Tátt*, *tút shaktút*). Found in the Himáláyas up to 5,000 feet, also on the plains. Wood hard and strong  
*Used* for construction, implements, and in carriage building.
- Olea Europæa* (*Kau*, *khan*, *khwán*). Abundant in the Trans-Indus, the Salt Range and the western part of the Sewálík tract; found also on the Chenáb, Rávi and Sutlej. Wood hard, strong and close grained.  
*Used* for the cogs of wheels, agricultural implements, cotton, wheels, walking-sticks, in turnery and for combs.  
*Used* also on the Indus for boats.

<i>Ougeinia dalbergioides</i> ( <i>Sāndan</i> ).	Grows throughout the Sewāliks. Wood hard and strong, durable, and not subject to warping or to worms. <i>Used for ploughs, wheels, sugar and cotton rollers combs, etc.</i>
<i>Pavia indica</i> ( <i>Bānkhor</i> , <i>gūgū torjaga</i> ).	Grows in the higher hills, Cis and Trans-Indus, up to 9,000 feet. Wood light colored and easily worked. <i>Used for packing-cases, tubs, water-troughs, building purposes, and sometimes for furniture.</i>
<i>Pinus excelsa</i> ( <i>Kail</i> ) ...	Found in the Himāláyas, also in the mountains Trans-Indus. Wood used for ordinary building purposes where deodar is scarce or dear. Exposure to much moisture causes it to decay rapidly.
<i>Pinus longifolia</i> ( <i>Chitl</i> ).	Found in the Sewāliks, and also beyond the Indus. Timber resinous and strong, but not very durable <i>Used largely for building purposes.</i>
<i>Pistacia integerrima</i> ( <i>Khakkar, dreh</i> ).	Found from the Sutlej to the Indus up to 5,500 feet, also in the Salt Range. Its hard zebra wood makes handsome articles of furniture. In Kāngra the wood is sometimes used for sugar-mills.
<i>Quercus dilatata</i> ( <i>Parungi</i> , <i>Barām Moru</i> ).	Abundant in the Punjab Himāláya from 4,500 to 9,000 feet. Timber is hard, heavy, durable, and used for ploughs, axe handles, house building, &c. ( <i>Q. Semicarpifolia</i> has similar uses.)
<i>Tamarindus Indica</i> ( <i>Imli</i> ).	Found about Delhi. Wood hard, heavy and strong. <i>Used for naves, sugar and oil mills, &amp;c.</i>
<i>Tamarix Orientalis</i> ( <i>Farāsh</i> ).	Grows commonly in the Punjab plains. Timber is coarse grained and heavy, weight 60 lbs. per cubic foot dry. In the Southern Punjab it is used for ploughs, Persian wheels and small rafters. In Sind the wood is employed in turnery.
<i>Zizyphus jujaba</i> ( <i>Ber</i> ) ...	Found throughout the Province. Wood tough, tolerably strong and durable. Used for well-courbs, Persian wheels, &c., and in ordinary construction work.

(b). WOOD USED IN TURNERY AND FOR COMBS, &c.

<i>Acer cultratum</i>	
<i>Balanites</i> <i>Egyptiacus</i> ( <i>Hingol</i> ).	Found and used about Delhi.
<i>Betula bhojpatra</i>	
<i>Buxus sempervirens</i> ( <i>Chikni, chikri</i> ).	Found on the Satlej and Beas, in the Salt Range and round Panch. Wood very hard and durable.
<i>Capparis aphylla</i> .	Imported largely in Amritsar for combs, &c.
<i>Crataeva religiosa</i> ( <i>Barna</i> ).	Found in the Sewāliks and west as far as Jhelum. Wood soft and easily cut, but tough. <i>Used for carving models, combs, &amp;c.</i>
<i>Diospyros tomentosa</i> ( <i>Kinnu</i> ).	Found in the Sewālik tract near the Rāvi. Heart wood called ābnūs (ebony) is fine, black, hard and brittle. It carves well; combs are made from it in Umballa. <i>Used for ploughs, &amp;c., in Kāngra.</i>
<i>Flacourtia sapida</i> ( <i>Kangu</i> , <i>kukoa</i> ).	Found in the lower hills and in the Salt Range. Wood close grained and hard. <i>Used for combs and in turnery.</i>
<i>Fraxinus floribunda</i> ( <i>Sām</i> ).	
<i>Holarthema antidysenterica</i> ( <i>Kawar, kūra</i> ).	Found in the Sewālik tract up to the Chenāb. Wood white, light and close grained. Is cut into spoons, combs, &c.
<i>Juniperus excelsa</i> , <i>Morus serrata</i> ( <i>Tut</i> ).	Common in many parts of the Punjab Himāláya. From 2,500 to 9,000 feet. Wood yellow and strong, but subject to the attacks of worms.
<i>Olea Europaea</i> ( <i>Kau</i> )	<i>Used for toys, &amp;c.</i>
<i>Ougeinia dalbergioides</i>	
<i>Pavia indica</i> .	
<i>Pinus excelsa</i> .	
<i>Populus euphratica</i> ( <i>Safeida</i> ).	Found in Sind, Mooltan, and on the Indus as far as Attock. Wood soft, white, toughish. Heart wood of old trees dark and strong. In the Punjab it is used for wells.
<i>Tamarix Orientalis</i> .	
<i>Wrightea mollissima</i> ( <i>Kilāwa</i> ).	Found in the Sewālik tract. Wood yellowish, white, light and soft. <i>Used in Amritsar for combs.</i>

(c) USED FOR WELL GEAR.

*Acacia Arabica*, *A. speciosa*, *Bombax heptaphyllum*, *Butea Frondosa*, *Populus Euphratica*, *Sizygium jambolanum*, *Zizyphus jujaba*.

(d). USED IN WHEEL WORK.

*Dalbergia sissoo*, *Acacia Arabica*, *A. modesta*, *A. catechu*, *A. speciosa*, *Tamarindus Indica*, *Tamarix Indica*, *T. orientalis*, &c.



## APPENDIX No. II.

## DERAJAT DIVISION NOTES.

Muzaffargarh.	Centres.—Kot Adú and Sítpur. Manufactures noted.—Bows and arrows made of horn and bamboo. State of trade.—Fair.
Dera Gházi Khan.	Centres.—Dera Gházi Khan, Jámpur and Rájanpur. Manufactures noted.—Bed-legs, toys and boxes, spinning-wheels and combs. State of trade.—Prosperous (especially the Bhattis and Chagathás).
Dera Ismail Khan.	Centres.—Dera Ismail Khan. Manufactures noted.—Turnery. State of trade.—Fair; wages high.
Bunnu.	Centres.—Edwardesabad, furniture; Kalabágh, boats; Mianwáli, saddle-frames; Kandian, musical instruments; Daud Khel, saddle-trees; Waha Khel, well gear. Manufactures noted.—None. State of trade.—Stationary.

Division.	District.	Work.	Caste.	Number employ- ed.	Wages.	Amount of output.	Profit.	Place.
					R. a. R. a.	Rs.	Rs.	
Deraját	Muzaffargarh	Agriculture	Tarkhán	2,683	...	32,000	...	Muzaffargarh.
		Carriage-build- ing.	Sikh	5	...	3,000	8 to 14%	
		Turnery	Muham- madan.	118	...	8,000	...	
		Kamárgin	...	20	...	1,500	...	
		Boat-building	...	20	...	3,000	...	
	D. G. Khan	Spinning- wheels.	...	11	0 8 to 1 4	2,660	...	D. G. Khan, Jámpur, Rájanpur.
		Sticks & toys.	...	25	...	...	...	
		Bed-legs and boxes.	...	39	...	12,000	...	
		Combs	...	33	...	4,000	...	
	D. I. Khan	Jugs, cups, &c.	Awans Syads.	313	...	...	...	
		Turnery	...	66	0 8 to 0 12	18,000	...	
	Bunnu	Agriculture	Tarkhán	749	...	...	...	Edwardesabad, Kálabágh, Mianwáli.
		Furniture	Sikh	7	...	...	...	
		Boat-building.	...	76	0 4 to 1 0	...	...	
		Bed-legs, &c.	...	143	...	...	...	
		Musical Instru- ments.	...	6	...	...	...	
		Combs	...	26	...	...	...	

TABLE OF EXPORTS AND IMPORTS, AMOUNT OF RAW MATERIAL, &amp;c.

District.	EXPORTS.			IMPORTS.				
	Articles.	Place.	Amount.	Articles.	Place.	Amount.	Raw material.	Octroi.
Muzaffargarh	English furni- ture.	D. G. Khan	Rs. 150	Bed-legs and furni- ture.	Sakhar	Rs. 500	Rs. 27,000	...
	Turnery	...	1,000	Miscel- laneous.	...	1,000	...	...
				Timber.	...	4,412	...	...
D. I. Khan	Turnery	Dists. Punjab	4,600	Miscel- laneous.	England	1,000	5,000	...
		Kábul	2,000	...	Punjab	3,000	...	...
D. G. Khan	...	None.	...	...	None.	...	18,660	...
Bannu	Furniture	Frontier	300	Timber.	...	300	19,665	...
				Pen- boxes.	Delhi	75	...	...

## APPENDIX No. II—continued.

## PESHAWAR DIVISION NOTES.

- Pesháwar (1) *Centres.*—Pesháwar—Fans and trellis-work.  
                     Prang ... } Boats.  
                     Chársadda ... }
- (2) *Manufactures noted.*—The trellis-work made at Pesháwar is of “exceptional fineness and delicacy”; fans with lacquered handles are made in great quantities for export.
- (3) *State of the trade.*—Wages high; Pinjra trade languishing; turners and boat-builders fairly prosperous.
- Kohát (1) *Centre.*—Kohát. Olive walking-sticks, and belnás wood-work (kunda) and guns.
- (2) *Manufactures noted.*—None.
- (3) *State of trade.*—Wages high; trade stationary.
- Hazára (1) *Centres.*—Maira ... } Sanak, kulfis, chilams.  
                     Mansehra ... }
- (2) *Manufactures noted.*—Sanaks, large wooden plates for kneading flour; kulfis; cups in which the kneaded flour is kept.
- (3) *State of the trade.*—No information.

## TABLES FOR THE PESHAWAR DIVISION.

District.	Work.	Caste.	Number employed.	Wages.		Amount of output.	Profits, &c.	Places noted, &c.
				R. a.	R. a.	Rs.		
Pesháwar	Total	Awán Hindki	1,771	...		1,84,420	} ...     10%  ... ...	Total for district Pesháwar (Chársada).
	Pinjra, &c.	...	160	0 12	to 1 0	2,500		
	Carriage-building.	Sikh	15	0 12	to 0 14	...		
	Boat-building	Awán Hindki	28	...		3,600		
	Turnery	...	120	0 8	to 0 12	1,000		
	Walking-sticks, boxes and fan handles.	...	60	0 6	to 0 10	30,000		
Kohát	Total	...	...	...		...	} ...   25%	...
	Belnás	...	4	0 3	to 0 4	300		
	Walking-sticks	...	10	(agriculture)		200		
	Turnery	...	5	0 10	to 1 0	200		
Hazára	Total	...	...	0 6 to 0 8		...	...	Maira and Mansehra.
Sanaks kulfis	...	No	returns.		...	...		

## PRICES.

Boats ... Rs. 200 to 800; Pinjra Rs. 2-5 per square foot; carved wood Rs. 3 per cubic foot.

Bed-posts ... „ 1-8 to 2; chirkás Rs. 2; sticks As. 1½ to As. 4; belnás As. 5.

## TABLE OF EXPORTS AND IMPORTS, AMOUNT OF RAW MATERIAL, &amp;c.

District.	EXPORTS.			IMPORTS.				
	Articles.	Place.	Amount.	Place.	Articles.	Amount.	Raw material.	Ostroï.
			Rs.			Rs.		
Pesháwar	Fans	Kohát	100	Independent territory.	Wood	80,000	74,000	3-2%
	Sanaks, pinjra	Kábul, Ráwal-pindi, Lahore, &c.	9,000	Saharanpur, Calcutta, Bombay.	} Cups, toys, &c. }	3,500		
				Other Districts	...	500		
	Total	...	9,100			4,000		
Kohát	Belnás	Independent territory.	150	Tirah	Wood	9,214		
				Kábul and Kurrám.	...	3,827		
				Banna	Bed-legs	...		
				Pesháwar	Fans.	...		
				Hazára	Sanaks	100		
Hazára	Total	...	150			100		
	Sanaks	Kohát	...	Pind Dádan Khan, Hoshiárpur ... Kartárpur ...	} Bed-legs and Chairs. }	No	figures	given.

# APPENDIX No. II—continued.

## JULLUNDUR DIVISION.

### NOTES.

Jullundur.	Centres.—Núrmahal—Architecture and wood-carving. Jullundur ... } Turnery and furniture turned out in great quantities. Kartárpur ... }
	Manufactures noted.—Turnery, but is not of high artistic value. Kartárpur furniture largely exported to other districts, and is noted for its cheapness.
	State of the trade.—Fair. Turners well off.
Ferozepore.	Centres.—Ferozepore. Furniture and turnery. Manufactures noted.—One turner's work is well known.
	State of trade.
Hoshiárpur.	Centres.—Hoshiárpur—Turnery, inlaid-work, and furniture. Basi Ghulám Hosain—Furniture and inlaid-work. Piplánwála, Bahádarpur (Mukerian, Umar, Tandá)—Bed-legs. Dasúya, umbrellas; Bathullas, drums (dhols); Miáni, cart-wheels; Unah baskets.
	Manufactures noted.—Furniture, inlaid-work and turnery.
	State of trade.—Timber trade and the turners flourishing.
Ludhiána.	Centres.—None. Manufactures noted.—None. State of trade.—Workmen fairly well off.

TABLES OF THE JULLUNDUR DIVISION.

Division.	District.	Work.	Caste.	Number employ- ed.	Wages.	Amount.	Profit.	Place.
					R. s. R. a.	Ra.		
Jullundur ...	Jullundur ...	Persian wheels	...	44	0 5 to 0 6	2,320	25 %	Kartárpur.
		English carriages.	...	23	0 8 to 0 12	5,000		
		Wheels	...	100	...	20,280		
		Ekkás	...	6	...	2,550		
		Furniture	...	57	...	7,360		
		Turnery	...	285	...	33,653		
		Boxes	...	16	...	780		
		Musical Instruments.	...	3	...	150		
	Ferozepore ...	Agriculture	...	670	...	...	...	Ferozepore.
		Cotton-cleaning Machines.	...	105	...	...		
		Architecture and Carriage-building.	{ Sikh ... Muham.	412 5	...	...		
		Furniture	...	204	...	...		
		Spinning-wheels.	...	150	...	...		
		Boat-building	...	47	...	...		
	Hoshiárpur ...	Agricultural	Tarkhás, Dumnah	5,186	0 2½	5,43,129	...	Hoshiárpur.
		Architecture	Jhiwar, Rájpút.	45	0 6 to 0 8	53,438		
		Carriage-building.	Gharu ...	69	0 6	14,529		
		Furniture	...	106	...	18,132		
		Turnery	...	309	0 6 to 0 8	46,728		
		Kamángiri	...	13	0 6 to 0 8	1,671		
		Baskets	Chamár, Rám Dásia	608	2½	49,195		
		Toys, boxes, &c.	...	63	4½	10,340		
		Combs	...	8	2½	537		
		Musical Instruments.	...	12	0 5 to 0 6	2,779		

## APPENDIX No. II—continued.

## JULLUNDUR DIVISION—concluded.

## TABLES—concluded.

Division.	District.	Work.	Caste.	Number employ- ed.	Wages.—	Amount.	Profit.	Place.
					R. a. R. a.	Rs.		
Jullundur ...	Ludhiána ...	Agriculture ...	...	3,791	...	...	...	...
		Architecture ...	...	15	0 12 to 1 0	4,000	...	...
		Door-frames...	{ Sikhs	86	...	51,000	...	...
		Native car- riages.	{ Sheikhs	126	0 8	16,700	...	...
		Turnery ...	{ Patháns	27	0 6 to 0 7	3,100	...	...
		Baskets ...	Bhanjárás	28	0 4	3,000	...	...
		Boxes, &c. ...	...	...	...	2,000	...	...
	Kángra							

## TABLE OF PRICES.

Work.	Jullundur.	Ferozepore.	Hoshiárpur.	Ludhiána.	Kángra.
	Rs. a. Rs. a.	Rs. a. Rs. a.	Rs. a. Rs. a.	Rs. a. Rs. a.	
Almirás ...	20 0 to 30 0	...	Inlaid. 4 0 to 80 0	...	
Office desks...	20 0 to 25 0	...	...	...	
Chest-of- drawers.	20 0 to 25 0	...	...	...	
Dining-tables	30 0 to 50 0	...	...	5 0 to 30 0	
Ornamental tables.	15 0 to 20 0	...	1 0 to 28 0	...	
Screens ...	20 0	...	...	...	
Boxes ...	2 0	...	1 8 to 70 0	...	
Chairs ...	...	2 8 to 3 0	5 0 to 40 0	3 0 to 5 0	
Chaukis ...	...	...	8 0 to 32 0	1 0 to 2 0	
Pen-boxes ...	0 8 to 1 8	...	1 0 to 10 0	...	
Suráhis ...	...	...	0 8 to 5 0	...	
Dabbás ...	...	...	1 0 to 2 0	...	
Guldán ...	...	...	1 0 to 5 0	...	
Bed-legs ...	1 0 to 5 0	...	2 0 to 8 0	4 0 to 10 0	
Carts ...	...	50 0 to 100 0	...	40 0 to 80 0	
Ekkás ...	...	25 0 to 50 0	...	...	
Chejgári ...	...	...	...	350 0	
Shigrams ...	...	...	...	250 0 to 300 0	
Dog-carts ...	...	...	...	100 0 to 150 0	
Carved door- frames.	...	...	80 0 to 150 0	50 0 to 80 0	
Cart-wheels...	...	...	...	5 0 to 15 0	

## TABLE OF EXPORTS AND IMPORTS, AMOUNT OF RAW MATERIALS, &amp;c.

District.	EXPORTS.			IMPORTS.				
	Work.	Place.	Amount.	Work.	Place.	Amount.	Raw material.	Octroi.
			Rs.			Rs.	Rs.	
Jullundur ...	Turnery ...	{ Delhi ... Ludhiána, Amritsar Lahore ... }	16,183	Pen-boxes ...	Bombay ...	3,000	1,06,000	
	Miscellaneous	...	3,670	Boxes, small...	...	3,200	...	
				Boxes, large ..	...	7,800	...	
				Furniture, &c.	Hoshiárpur	39,630	...	
				Combs, &c. ...	Amritsar ...	732	...	
				Wood	{ Hoshiárpur Gujránwála Kángra ... }	85,850	...	
					{ Patiala ... Jhelum ... Kángra ... }	...	...	
Ferozepore ...	...	...	...	Wood	...	...	...	
Hoshiárpur ...	Turnery ...	Punjab, gene- rally.	24,125	...	...	...	5,90,000	
	Furniture ...	...	9,848	Sticks ...	Umballa ...	2,000	...	
	Timber ...	...	2,97,000	...	Delhi	...	...	
	Toys, &c. ...	Bombay ...	10,682	...	...	...	...	
	Inlaid furni- ture.	„ Calcutta, &c.	5,533	...	...	...	...	
Ludhiána ...	Boxes, toys, &c.	{ Hoshiárpur ... Delhi ... Jullundur ... }	2,500	Timber	{ Hoshiárpur Umballa, &c. Phillour ... }	70,000	...	

## APPENDIX No. II—continued.

## LAHORE DIVISION.

## NOTES.

Lahore.	Tarkhāns prosperous and thrifty. Are buying land. Centres.—Lahore. Noted for furniture and carriage-building. (There is one European firm of coach-builders).
Amritsar.	There is a School of Art here, which does useful work, &c. Centres.—Amritsar, for combs, musical instruments, &c. Batāla, for architecture wood-work, Jhandiāla. Ekka wheels. Tarkhāns generally prosperous. Certain branches of the trade, e. g., wood-carving, kamāngiri, &c., on the decline.
Gurdāspur.	A Technical School at Amritsar for instruction in wood-carving. Centres.—Gurdāspur. Agriculture machines (oil-mills, &c.). Manufactures noted.—None.
Mooltan.	State of trade.—Wood-dealers fairly prosperous; Tarkhāns poorly off. Centres.—Mooltan. Manufactures noted.—None.
Jhang.	Trade languishing, and Tarkhāns badly off. Centres.—Kot Isa Shah and Ahmadpur for turnery. Chinfot. Carving, &c.
Montgomery.	Manufactures noted.—Turnery and wood-carving, and camel-litters. State of trade.—Workers in these branches thriving. Centres.—Pākpattan and Dipālpur. Turnery, &c. Manufactures noted.—Turnery. State of trade.—Lacquer-workers flourishing; other branches of the trade languishing.

TABLE OF THE LAHORE DIVISION.

District.	Work.	Caste.	Number employed.	Wages.	Outturn.	Profits.	Centres, &c.
				Rs. a. Rs. a.	Rs.		
Lahore	Agricultural	Sikh	2,100	...	1,00,000	10%	Lahore.
	Architectural	Arora	500	...	1,40,000		
	Turnery	...	300	...	36,000		
	Kamāngiri	Kamāngar	30	0 8 to 1 0	5,600		
	Carriages (English) and Furniture.	...	100	...	18,000		
	Comb-makers	...	100	...	3,600		
	Wood-dealers	Khatrī, &c.	50	...	...		
	Railway Works	...	2,000	...	...		
Amritsar	Agricultural	Sikh	600	0 5 to 7 0	2,40,000	15%	Amritsar. Batāla. Jandiāla.
	Architectural	...	1,300	0 10 to 0 14			
	Carriage and Furniture.	...	40	0 8 to 0 10			
	Turnery	...	100	0 4 to 0 6			
	Combs	...	150	0 3 to 0 6			
	Musical Instruments.	...	26	0 4 to 0 14			
	Cricket-gear	...	6	...			
Gurdāspur	Agricultural	{ Ansan Bhatti }	2,128 1,099	...	...	...	Gurdāspur.
	Architectural	...	581 126	0 7 to 0 8			
	Carriage-building.	Saprah, &c.	22 0	...			
	Turnery and Furniture.	...	676 71	0 4 to 0 8			
	Combs	...	112 0	...			
	Shuttle-cocks	...	5 0	...			
	Cricket-gear	...	6	...			
Mooltan	Agricultural	{ Sikh Janjua }	1,300	...	65,000	...	Mooltan.
	Architectural	{ Khokhar Bhatti }	200	0 7 to 1 0			
	Furniture, &c.	...	125	...			
	Turnery	...	70	...			
	Combs	...	25	...			

## APPENDIX No. II—continued.

LAHORE DIVISION—concluded.

TABLES—concluded.

District.	Work.	Caste.	Number employed.	Wages.	Outturn.	Profits.	Centres, &c.
				Rs. a. Rs. a.	Rs.		
Jhang ...	Turnery ...	Sikh ...	49	0 7 to 0 8	...	...	...
Montgomery...	Agricultural	Dhaman ...	947	...	...	...	...
	Architectural	Khokkar ...	35	...	...	...	...
	Carriage and Furniture.	Siawan ...	52	0 8 to 0 10	...	...	...
	Turnery ...	...	122	0 8 to 0 12	...	...	...
	Boat-building	...	2	...	...	...	...

TABLE OF PRICES.

Work.	Lahore.	Amritsar.	Gurdáspur.	Mooltan.	Jhang.	Montgomery.	
	Rs. a. Rs. a.	Rs. a. Rs. a.	Rs. a. p. Rs. a.	Rs. a. Rs. a.	Rs.	Rs. a.	
Well-gear ...	40 0 to 50 0	...	51 0 0	25 0 to 45 0	...	30 0	
Sugar-mills	...	...	45 0 0	...	...	...	
Oil-mills	...	...	8 0 0	...	...	...	
Flour-mills	...	...	...	...	...	80 0	
Dog-carts ...	160 0 to 300 0	80 0	110 0 0	...	...	4 0 %	Toys.
Phaetons ...	400 0	300 0 to 400 0	...	...	...	1 0	Goblets.
Shigrams ...	...	175 0	300 0 0	...	...	1 0	Flower-holder.
Ekkás ...	20 0	30 0	25 0 0	...	...	0 8	Candle-holders.
Ekká-wheels	...	9 0 per pair	...	...	...	1 0	Chessmen.
Chairs ...	From 1 12	From 2 0	...	...	...	...	
Tables ...	4 0 to 30 0	...	...	...	...	...	
Almirás ...	From 8 0	...	...	...	...	...	
Bed-legs ...	1 0 to 1 8	...	0 12 0 to 4 0	2 0 to 10 0	...	4 0	
Pirás ...	...	...	...	...	...	From 1 0	
Chirkhás ...	1 0 to 2 8	...	0 12 0 to 5 0	...	...	4 0	
Boxes ...	0 8 to 10 0	...	...	0 4 to 2 0	Camel-litter 100	From 0 4	
Door-frames	...	...	15 0 0 to 80 0	...	74	...	
Báris ...	...	...	8 0 0 to 25 0	...	96	...	
Combs ...	...	15 %	0 0 3 to 0 2	0 13 to 1 8 %	...	...	
Baskets ...	...	...	0 0 6 to 0 2	...	...	...	
Hooka stems	...	...	...	Bows 0 8 Lances 1 0 to 3 -0	...	...	
Boats ...	400 0	...	270 0	...	...	400 0	
Bansris ...	...	...	...	...	...	...	
Baskets ...	...	...	...	...	...	...	
Shuttle-cocks	...	...	0 4 0 to 0 8 a dozen	...	...	...	
Cricket-gear	...	9 0 a set	...	...	...	...	

TABLE OF EXPORTS AND IMPORTS.

District.	EXPORTS.			IMPORTS.			
	Work.	Place.	Amount.	Work.	Place.	Amount.	Raw material used.
Lahore ...	Boats ...	Sukkur ...	Rs.	Chairs ...	Kartápur ...	Rs. 1,200	Rs. ...
Amritsar ...	Combs ...	Punjab ...	1,00,000.	Deodár-Chil Fans ...	Kashmír ...	10,000	...
	Flutes, &c. ...	...	...	...	Pesháwar ...	...	...
Gurdáspur ...	Ekkás.	...	...	Deodár and Chil.	Kashmír, &c.	1,50,000	3,35,000
	Combs ...	Neighbouring districts.	...	Furniture...	Lahore. Kartápur.	...	...
			Total 5,000			Total 75,000	...
	Shisham, Tán, &c.	Lahore Amritsar	40,000	Foreign woods.	Kashmír, Amritsar, &c.	25,000	...
Mooltan ...	...	...	...	Deodár ...	Wazirabad, Jhelum.	10,000	...
	None ...	...	...	Shisham ...	...	300	...
			...	Boxes, Sandals.	Chiniót ...	200	45,000
Jhang ...	Lacquered work to neighbouring districts.			Deodár ...	...	...	12,500
Montgomery...	No information.						

## NOTES.

- District Rāwalpindi. 1. *Centres.*—Rāwalpindi. Furniture and carriage-building.  
Alipur }  
Iklās } Native furniture.  
Fatehjang }  
Attock }  
Attock } Boat-building.  
Pindigheb }
- District Jhelum. 2. *Manufactures noted.*—None.  
3. *State of trade.*—All sections of the Tarkhān class badly off. Timber trade stationary.  
1. *Centres.*—Jhelum }  
Pind Dādan Khan } Boat-building.  
Dhaniyāla. Combs made of phulao.  
2. *Manufactures noted.*—None. The Jhelum and Pind Dādan Khan boats formerly celebrated.  
3. *State of trade.*—Comb-makers and shuttle-makers fairly well off. Boat-building trade languishing. Timber trade diminishing.
- District Shahpur. 1. *Centres.*—Bhera }  
Alipur Saiyadān } Wood-carving.  
Girōt }  
Jaura }  
Khushāb. Boat-building.  
Sāhiwāl. Turnery.  
Nūrpur. Combs.  
2. *Manufactures noted.*—Bhera wood-work, Sāhiwāl turnery, Nūrpur combs.  
3. *State of trade.*—Wood-carving and boat-building, the latter is languishing. Sāhiwāl turners and Nūrpur comb manufacturers in a prosperous condition.
- District Gujrāt. 1. *Centres.*—Gujrāt. Furniture.  
Khāriān. Hooka stems.  
2. *Manufactures noted.*—Gujrāt camp and easy-chairs. This trade capable of indefinite extension. Chairs turned out said to be yearly deteriorating in quality.  
3. *State of trade.*—Timber trade fairly prosperous. Wood carving on the decline. Furniture trade stationary.
- District Siālkot. 1. *Centres.*—Siālkot. Tennis bats, pinjra work, spear-shafts, coach-building, panels, &c.  
Ghāzipur }  
Dalowāli } Country carts.  
Gariwāl. Cart-wheels.  
Bajra. Turnery.  
Sandhānwāla. Combs and chankats.  
2. *Manufactures noted.*—Siālkot tennis bats, and spear-shafts painted on metallic ground and varnished.  
3. *State of trade.*—Turnery, comb-making, coach-building, flourishing. Timber trade increasing. In this trade there are 250 traders, representing Rs. 2,00,000 capital. Wood-carving on the decline.
- District Gujrānwāla. 1. *Centres.*—Wazirabad. Boat-building.  
2. *Manufactures noted.*—None.  
3. *State of trade.*—Wood-carving on the decline. The comb trade, which employs 30 hands, thriving. Wood used in the comb trade—karil, chikri (imported from the Central Provinces), van (imported from Kashmir), safeida (from Punc), and kan (olive) (from Rawalpindi).

TABLES OF THE RAWALPINDI DIVISION.

District.	Work.	Caste.	Number.	Wages.		Amount of outturn.	Profits, &c.	Remarks : places.
				R. a.	R. a.	Rs.		
Ráwalpindi ...	Total ...	Arora Awán	5,500	0 4	to 0 12	4,33,598	25	Boats, Attock.
	Furniture ...	...	40					
Jhelum ...	Wood-carving	...	60	0 7	to 0 8	...	...	Jhelum, Pind Dádan Khan.
	Furniture ...	...	15	0 6	to 0 8	1,000	...	
	Carts ...	...	6	0 4		250	...	
	Turnery ...	...	100	0 4	to 0 6	10,000	...	
	Boat-building	Gharús ...	40	0 4		4,000	...	
	Shuttles ...	...	...	0 4		1,000	...	
	Total ...		Unknown					



# APPENDIX No. II—continued.

RAWALPINDI DIVISION—continued.

TABLES—continued.

District.	Work.	Caste.	Number employed.	Wages.		Amount of outturn.	Profits, &c.	Remarks: places.
				R. a.	R. a.			
Shahpur ...	Wood-carving	Chohan Ráj-pút.	80	0 8	to 0 12	16,000	...	Bhera.
	Furniture ...	Muhammadan Tarkbáns.	65	0 4	to 0 8	8,000	...	
	Turnery ...	Janjua, Khokhar, &c.	75	...		8,000	...	Sáhiwál.
	Boat-building	...	10	0 4	to 0 8	1,100	Average 25 %	
	Basket-work	...	24	...		3,600	...	
	Musical Instruments.	...	6	...		900	...	
	Combs ...	...	68	...		9,000	...	Núrpur.
	Total ...	...	2,534	...		1,40,919	...	
Gujrát ...	Wood-carving	Bhatwál Bhatti	215	0 8		2,500	Profit 12 % Chairs Bed-legs.	
	Furniture ...	...	44	0 4	to 0 12	4,185		Gujrát.
	Turnery ...	...	145	0 4		5,590		Khárián, for Hooka pipes.
	Basket-work	{ Bhairupia, Sikhs, Mus-sallís. }	232	0 3		2,200		
	Total ...	...	...	...		...		
Siálkot ...	Wood-carving	Dháman, &c.	300	0 8	to 0 10	...	Profit 8 to 15 %	
	Turnery ...	...	250	0 5	to 0 7	...		
	Baskets {	{ Barwála ... Megh ... Batwál ... }	2,000	0 2	to 0 3	...	...	Siálkot.
	Combs ...	...	100	0 5	to 0 8	...		
	Tennis bats...	...	100	0 8	to 0 10	5,000		
	Total ...	...	4,968	...		2,73,983		
Gujránwála ...	Inlaid-work; Wood-carving.	...	...	...		20,000		
	Turnery ...	...	...	...		80,000		Gujránwála.
	Total ...	...	3,815	...		2,57,000		

TABLE OF PRICES.

Articles.	Ráwalpindi.		Jhelum.	Shahpur.		Gujrát.		Siálkot.	Gujránwála.	
	Rs. a.	Rs. a.		Rs. a.	Rs. a.	R. a.	R. a.		Rs. a.	Rs. a.
Well gear ...	...	...	...	45 0		(Wood supplied) 16 0 to 20 0		45 0	18 0 and upwards.	
Sugar Press	...	...	...	...	...	...	...	50 0	...	
Oil Press ...	...	...	...	...	...	...	...	10 0	...	
Flour Mill...	...	...	...	...	...	...	...	...	...	
Dog-cart ...	...	200	...	80 0 to 150 0		...	...	...	...	
Phaetons ...	...	500	...	...	...	...	...	...	...	
Wagonettes	...	400	...	...	...	...	...	...	...	
Carts ...	...	...	...	...	...	...	...	...	20 0 to 25 0	
Ekkas ...	...	...	...	25 0. Usually imported from Amritsar.		...	...	...	...	
Chairs ...	3 0 to 10 0		...	...	...	3 0 to 24 0		...	...	

## APPENDIX No. II—concluded.

RAWALPINDI DIVISION—concluded.

TABLES—concluded.

Articles.	Rāwalpindi.		Jhelum.		Shahpur.		Gujrāt.		Siālkot.		Gujránwāla.	
	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.	Rs. a.
Tables ...	...	...	...	...	Lacquered teapoy	8 0	...	...	...	...	...	...
Almirahs ...	10 0 to 50 0	...	...	...	...	...	...	...	...	...	...	...
Bed-legs ...	2 0 to 8 0	...	4 0 to 5 0	...	1 0 to 10 0	0 0	6 to 2 0	...	...	...	0 12 to 1 4	...
Pirās ...	3 0 to 5 0	...	...	...	3 0 to 4 0	0 0	8 to 3 0	...	...	...	...	...
Charkhās ...	2 0	...	2 8 to 3 0	...	2 0 to 7 0	...	...	...	...	...	...	...
Boxes ...	4 0 to 20 0	...	2 0 to 3 0	...	0 8 to 2 0	1 8.	...	...	...	...	4 0 to 5 0	...
Door-frames	...	...	...	...	1 4 to 5 0	1 4 to 5 0	...	...	...	...	...	...
Doors ...	...	...	...	...	2 0 to 4 0	2 0 to 4 0	...	...	...	...	...	...
Combs ...	...	...	...	...	0 ½ to 0 2	...	...	...	...	...	...	...
Baskets ...	...	...	...	...	0-0-2 to 0 3	0-0-6 to 0 1	...	...	...	...	...	...
Tennis bats	...	...	...	...	...	...	...	...	1 8 to 3 0	...	...	...
Lance shafts	...	...	...	...	...	...	...	...	3 0 etc.	...	...	...
Boats ...	...	...	230 0 to 425 0	...	250 0	...	...	...	...	...	...	...
Toys ...	...	...	...	...	0 12 to 1 8 per dozen.	...	...	...	...	...	...	...
Hooka stems	...	...	...	...	...	...	...	...	...	...	0 2 and upwards.	...

TABLE OF EXPORTS AND IMPORTS, &amp;c.

EXPORTS.				IMPORTS.			
District.	Work.	Place.	Amount.	Work.	Place.	Amount.	Raw Material.
			Rs.			Rs.	
Rāwalpindi, Octroi Rs. 3-2%	...	...	...	Qalamdāns ...	Hoshiārpur ...	...	...
				Deodār and Chil.	Kashmír ..	1,00,000	...
				Chairs ...	Kartārpur ...	...	...
				Fans ...	Peshāwar ...	...	...
Jhelum ...	Deodār ...	Places on the Jhelum.	...	Kau-wood ...	Kashmír ...	...	8,400
				Phulan ...	Peshāwar ...	...	...
Shahpur, Octroi Rs. 6½%	Combs ...	Mooltan, &c.	7,500	Toys ...	Hoshiārpur ...	500	10,000
	Lacquered-ware	}	7,000	Deodār ...	Jhelum ...	3,500	...
	Bed-legs ...			Furniture ...	Gujrāt ...	500	...
Gujrāt ...	Chairs ...	Lahore, Pindi, &c.	2,776	Timber ...	Wazīrabād ...	}	9,500
					Jhelum ...		
				Chankats ...	Batāla ...	2,328	...
				Bed-legs ...			
Siālkot ...	Tennis bats ...	} Punjab ...	5,000	Tun chairs ...	Hoshiārpur ...	5,000	...
	Spear-shafts.			Shisham chairs	Gujrāt ...	...	...
Gujránwāla ...	...	...	...	Wood ...	Wazīrabād, Kashmír, &c.	2,17,000	3,50,000

## DELHI DIVISION.

DISTRICT.	DESCRIPTION.	Number.	Hindu.	Muhammadan.	Factories.	Wages.	Out-turn.	Exports.	Imports.	REMARKS.
DELHI.	Agricultural Implements	...	...	...	...	Rs. a. Rs. a.	...	...	...	Tassu 8 inches 11.
	Architectural	4 70	...	...	1 10	0 12 to 1 0	...	...	...	Prices. Rs. a.
	Carriage-building.	{ English ... Phaeton 15	...	...	2	...	...	...	...	Rath ... 200 0
		{ Native { Raths 20	...	...	8	...	...	...	...	Majholi ... 80 0
		{ Carts, 1,200	...	(3)	70	...	...	...	...	Cart ... 60 0
	Furniture	{ English ... 15	...	15	3	...	...	...	...	Chair ... 4 8
		{ Native ...	...	...	...	...	...	...	...	Table ... 5 8
	Turnery and Kamángiri,	...	...	...	...	...	...	...	...	Bed-legs ... 1 8
	Boat-building	25 { Kahárs	...	...	3	0 7 to 0 12	...	...	...	Pirás ... 1 0
	Basket-making	...	...	...	...	...	...	...	...	to 0
	Miscellaneous, sticks and toys.	...	...	...	...	...	...	...	...	Boxes ... { 10 0
	Shoe lasts	{ 60 55	...	60 55	4 20	...	...	...	...	Price of woods, see report.
	Boxes, bed-legs	19	...	19	10	0 7 to 0 10	...	...	...	
	Hooka stems, &c.	...	...	...	...	...	...	...	...	
	Musical Instruments	...	...	...	...	...	...	...	...	
	Shuttles	11	Sikhs 11	...	5	...	...	...	...	
	Combs	...	...	...	...	...	...	...	...	
GURGAON.	Agricultural Implements	Including native furniture, wood-work. 1,775	1,775	...	775	4 annas to 8 annas per diem.	...	...	...	
	Architectural	...	...	...	...		...	...	...	
	Carriage-building.	{ English ...	...	...	...		...	...	...	
		{ Native ... Rath ... 25	25	...	9		...	...	...	
	Furniture ...	{ English ... 20	20	...	8		...	...	...	
		{ Native ... Beads { 10 7 }	10	7	4		...	...	...	
	Turnery and Kamángiri,	...	...	...	...		...	...	...	
	Boat-building	...	...	...	...		...	...	...	
	Basket-making	...	...	...	...		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	2	2	...	2		...	...	...	
	Hooka stems, &c.	...	...	...	...		...	...	...	
	Musical Instruments	...	...	...	...		...	...	...	
	Shuttles	...	...	...	...		...	...	...	
	Combs	...	...	...	...		...	...	...	
Sugar-mills ... 90 ... 90 16 Total raw material 50,000. Outturn 1,50,000. Profits 12 per cent.										
Thelás ... 36 36 ... 16 Castes— Castes—										
Camel carts ... 15 ... 3 Sheiks, Patháns 283 Khati ... 1,817										
Nalki ... 8-8 ... 2 Khatriás ... 794 (thriving). Lohárs ... 4										
Pattern-making 32 ... 16 Sikhs ... 11 Muhammadans 36										
Timber merchant ... 16 Kahars ... 15										
Chick, &c. ... 32 Chamárs ... 10 1,857										

## DELHI DIVISION--continued.

DISTRICT.	DESCRIPTION.	Number.	Hindu.	Muhammadan.	Factories.	Wages.	Outturn.	Exports.	Imports.	REMARKS.
KARNAL.	Agricultural Implements	1,687	...	...	...	From 6 annas to 1 rupee.	...	...	...	
	Architectural	...	...	...	...		...	...	...	
	Carriage-build- ing.	{ English Native	...	...	...		...	...	...	
	Furniture	{ English Native	...	...	...		...	...	...	
	Turnery and Kamāngiri	...	...	...	...		...	...	...	
	Boat-building	...	...	...	...		...	...	...	
	Basket-making	...	...	...	...		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	15	...	15	4		...	...	...	Imports. Delhi ... Rs. 2,500 Other places ... 500 3,000
	Hooka stems, &c.	...	...	...	...		...	...	...	
	Musical Instruments	...	...	...	...		...	...	...	Jaipur ... 500 Meerut ... 100 Bijnour ... 1,000 1,600
	Shuttles	...	...	...	...		...	...	...	
	Combs	...	...	...	...		...	...	...	Total ... 4,600
HISSAR.	Agricultural Implements	{ 1,662 102	{ 1,321 Sikh 102	{ 341 ...	...	Rs. 7½ to Rs. 20 per mensem.	...	...	...	Rs. a. Rs. a. Chirkha 0 8 to 2 0 Bagari 3 0 to 5 0 Beds 7 0 to 20 0 Doorways 35 0 Carts 40 0 Wagons 55 0 to 90 0 Telar 70 0 Plain-door 2 8 to 4 6 frames Doors 4 0 to 6 0 Baskets 6 ps. to 4 ans.
	Architectural	223	{ 171 Sikh 20	{ 32 ...	...		...	...	...	
	Carriage-build- ing.	{ English Native	157 6	157 Raths Capitalists.	...		...	...	...	
	Furniture	{ English Native	153 ...	13 ...	140 ...		...	...	...	
	Turnery and Kamāngiri	Kahárs 8	...	8	...		...	...	...	
	Boat-building	...	...	...	...		...	...	...	
	Basket-making	290	250	40	...		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	27	27	...	...		...	...	...	
	Hooka stems, &c.	...	...	...	...		...	...	...	
	Musical Instruments	...	...	...	...		...	...	...	
	Shuttles	...	...	...	...		...	...	...	
	Combs	...	...	...	...		...	...	...	

Raw material 15,000 imported.

Dealers in wood 9.

Castes—Sheikhs.  
Khati.H. Khati 1,695  
M. Khati 373  
Sheikh 143  
Pathán 2Sikh Khati 125  
H. Jhinwar, Chura and Heri 250  
M. Jhinwar and Múchi 40  
2,628

## DELHI DIVISION—continued.

DISTRICT.	DESCRIPTION.	Number.	Hindu.	Muhammadan.	Factories.	Wages.	Outturn	Exports.	Imports.	REMARKS.
ROHTAK.	Agricultural Implements	...	...	...	...	Wages 4 annas to 1 rupee.	...	...	...	Doors Rs. 40 to 50.
	Architectural	...	...	...	...		...	...	...	
	Carriage-building. { English	...	...	...	...		...	...	...	
	Native	...	...	...	...		...	...	...	
	Furniture { English	...	...	...	...	Outturn Rs. 198 per head per annum.	...	...	...	From beri and sandal-wood. Caste—Khatis, 2,897.
	Native	...	...	...	...		...	...	...	
	Turnery and Kamángiri	2,475	...	...	...		4,90,528	...	...	
	Boat-building	...	...	...	...		...	...	...	
	Basket-making	...	...	...	...		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	...	...	...	...		...	...	...	
	Hooka stems, &c.	...	...	...	...		...	240	...	
	Musical Instruments	...	...	...	...		...	...	...	
	Shuttles	...	...	...	...		...	...	...	
	Combs	...	...	...	...		...	...	...	
UMBALLA.	Agricultural Implements	...	...	...	...	5 annas to 8 annas per diem.	...	...	...	
	Architectural carving...	...	...	...	...		...	...	...	
	Carriage-building. { English	...	...	...	...		...	...	...	
	Native	...	...	...	...		...	...	...	
	Furniture { English	...	...	...	...		...	...	...	
	Native	...	...	...	...		...	...	...	
	Turnery and Kamángiri	...	...	...	...		...	...	...	
	Boat-building	+400	Barhi	...	...		...	...	...	
	Basket-making	50	Kahars	...	...		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	...	...	...	...		...	...	...	
	Hooka stems, &c.	...	...	...	...		...	...	...	
	Musical Instruments	...	...	...	...		...	...	...	
	Shuttles	...	...	...	...		...	...	...	
	Combs and spoons	30	Sheikhs.	...	9		...	...	...	

Raw material ... Total Rs. 20,000.

Wood imported ... Rs. 18,549.



## DELHI DIVISION—concluded.

DISTRICT.	DESCRIPTION.	Number.	Hindu.	Muhammadian.	Factories.	Wages.	Outturn.	Exports.	Imports.	REMARKS.
SIMILIA.	Agricultural Implements	...	...	...	...	Earnings from Rs. 12 to Rs. 18 per mensem.	...	...	...	
	Architectural carving...	32	16	16	11		...	...	...	
	Carriage-building. { English	...	...	...	...		...	...	...	
	{ Native...	...	...	...	...		...	...	...	
	Furniture. { English	58	51	7	14		...	...	...	
	{ Native...	...	...	...	...		...	...	...	
	Turnery and Kamangiri	...	...	...	...		...	...	...	
	Boat-building	...	...	...	...		...	...	...	
	Basket-making	32	27	5	12		...	...	...	
	Miscellaneous, sticks and toys.	...	...	...	...		...	...	...	
	Shoe lasts	...	...	...	...		...	...	...	
	Boxes, bed-legs	...	...	...	...		...	...	...	
	Hooka stems, &c.	...	...	...	...		...	...	...	
	Musical Instruments	...	...	...	...		...	...	...	
	Shuttles	...	...	...	...		...	...	...	
	Combs	...	...	...	...		...	...	...	

FIG. I

*Chaukát and Door, showing Brass panelling.*

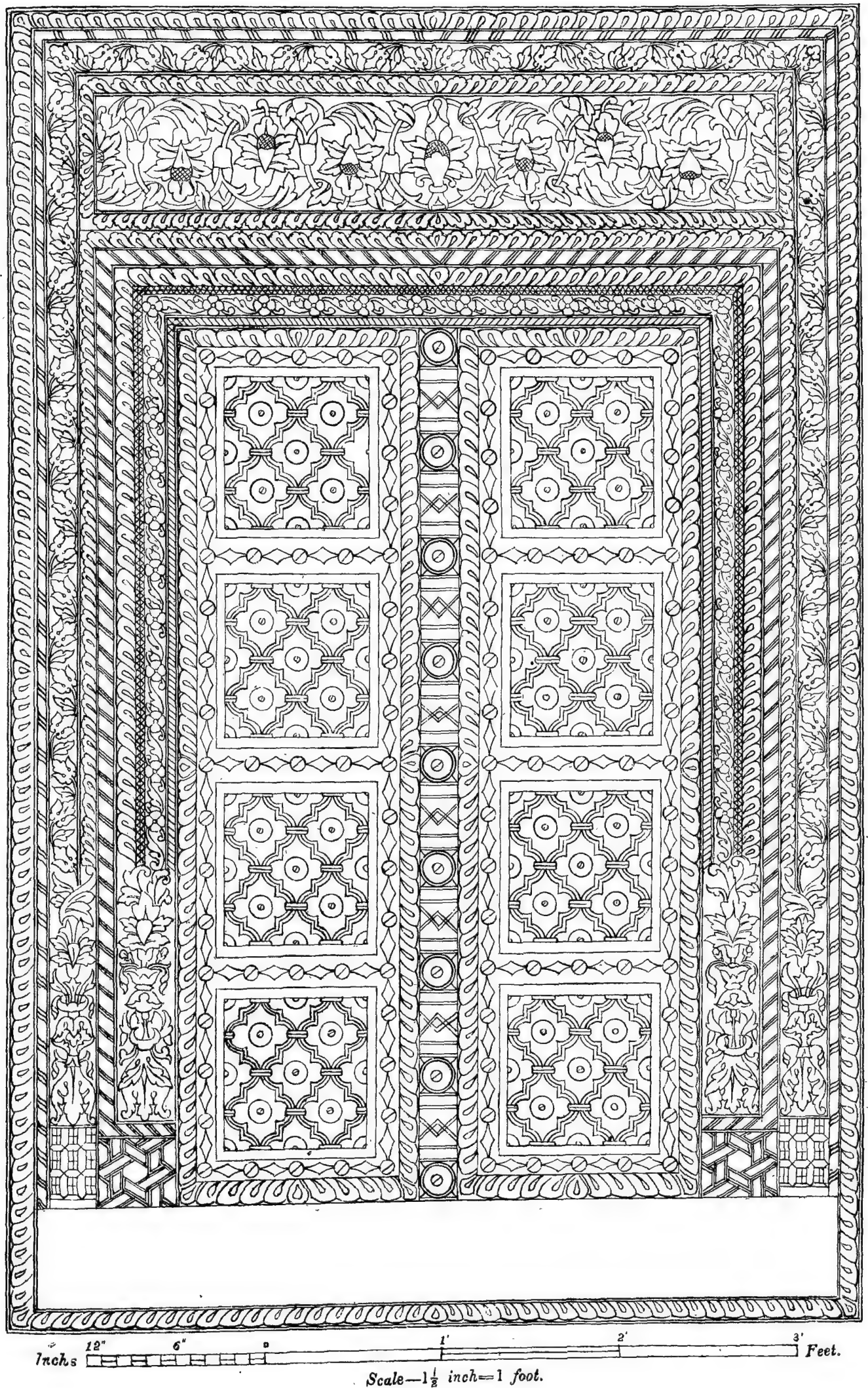
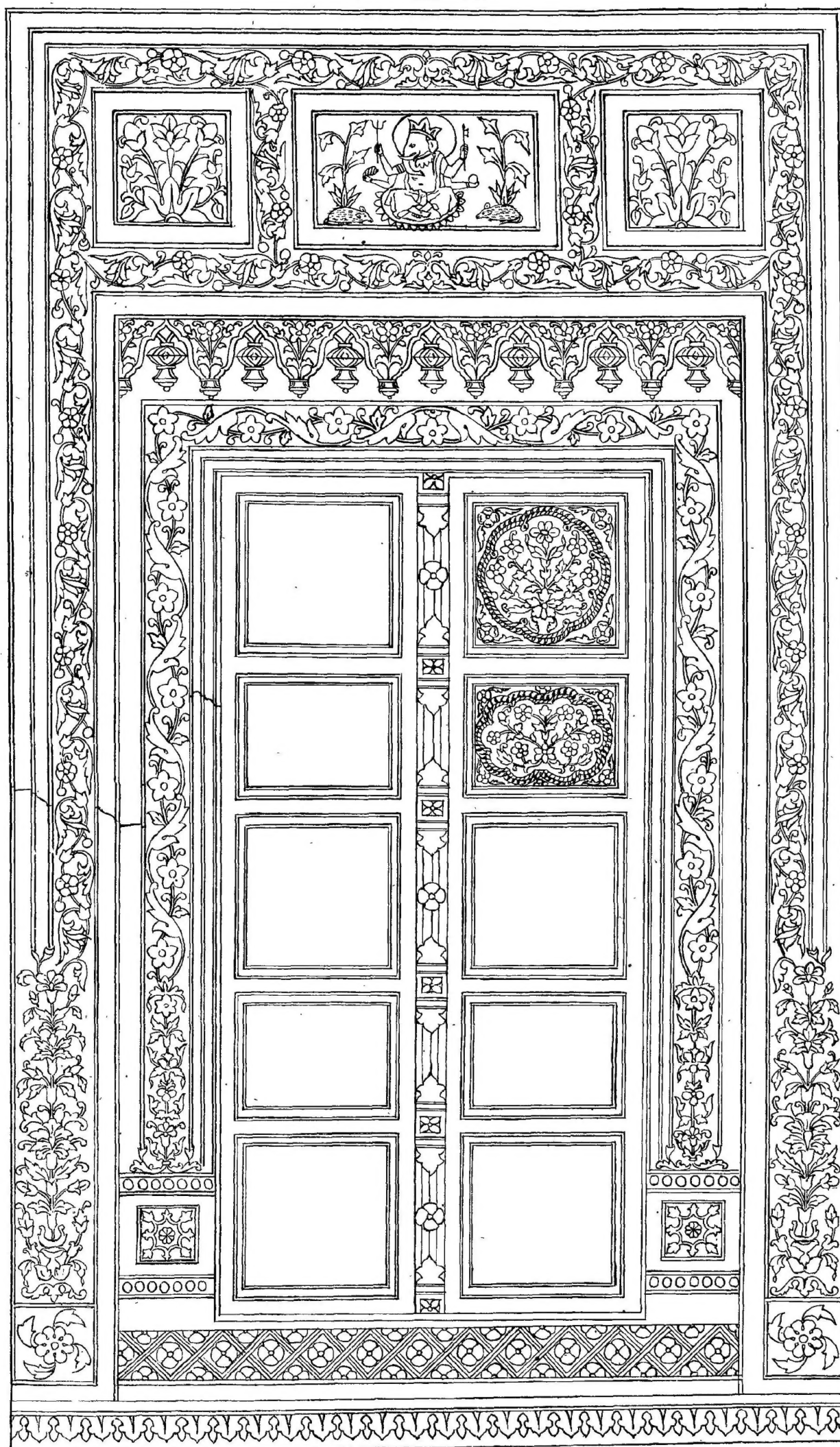


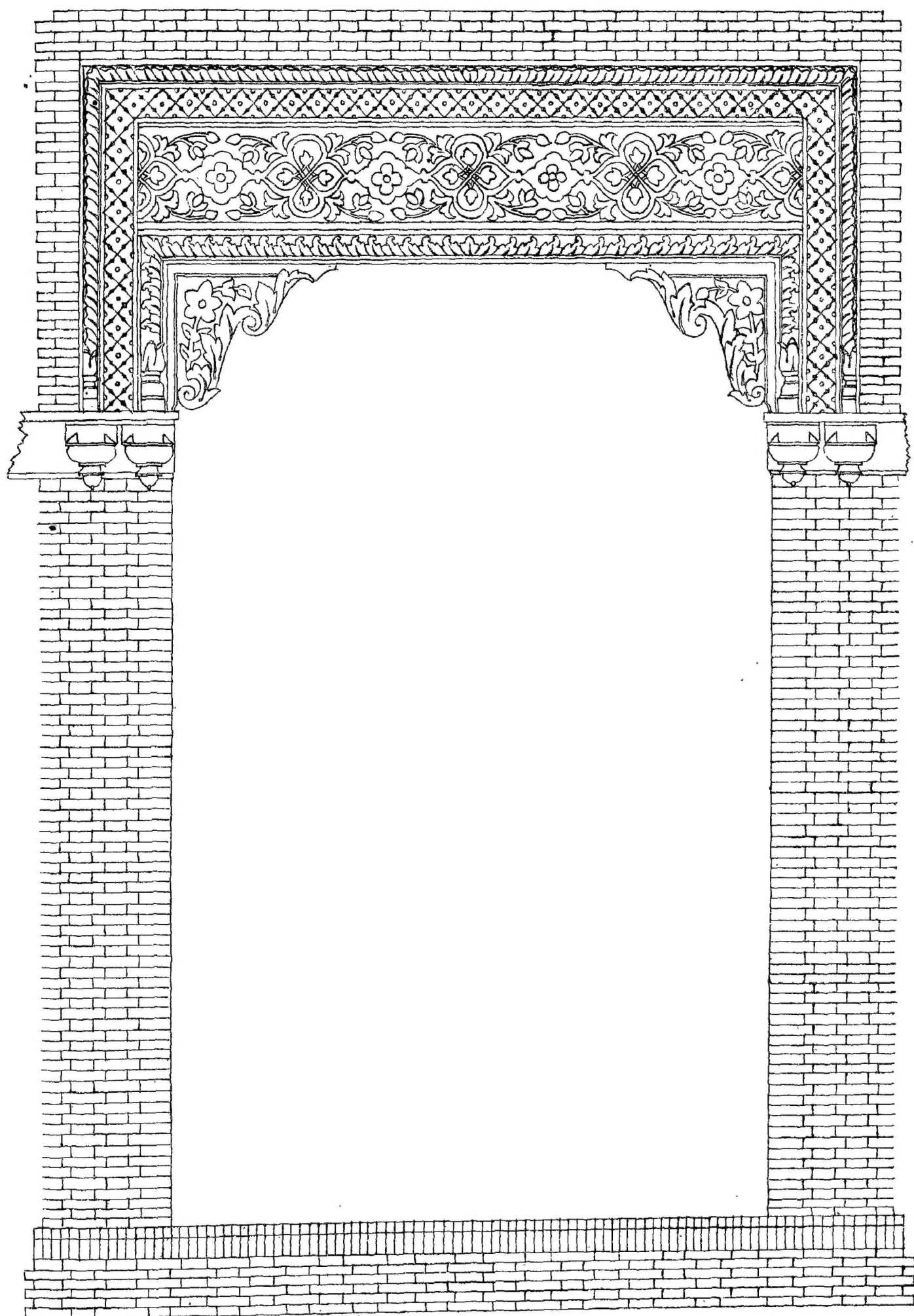
FIG. II.  
*Chaukát and Door.*



Inch 2 0 1 2 3 foot.

FIG. III.

*Toda or Lintel.*



Inch 0 1 2 3 4 5 6 7 8 9 10 Feet.

Scale— $\frac{1}{4}$  inch=1 foot.



Fig. IV.

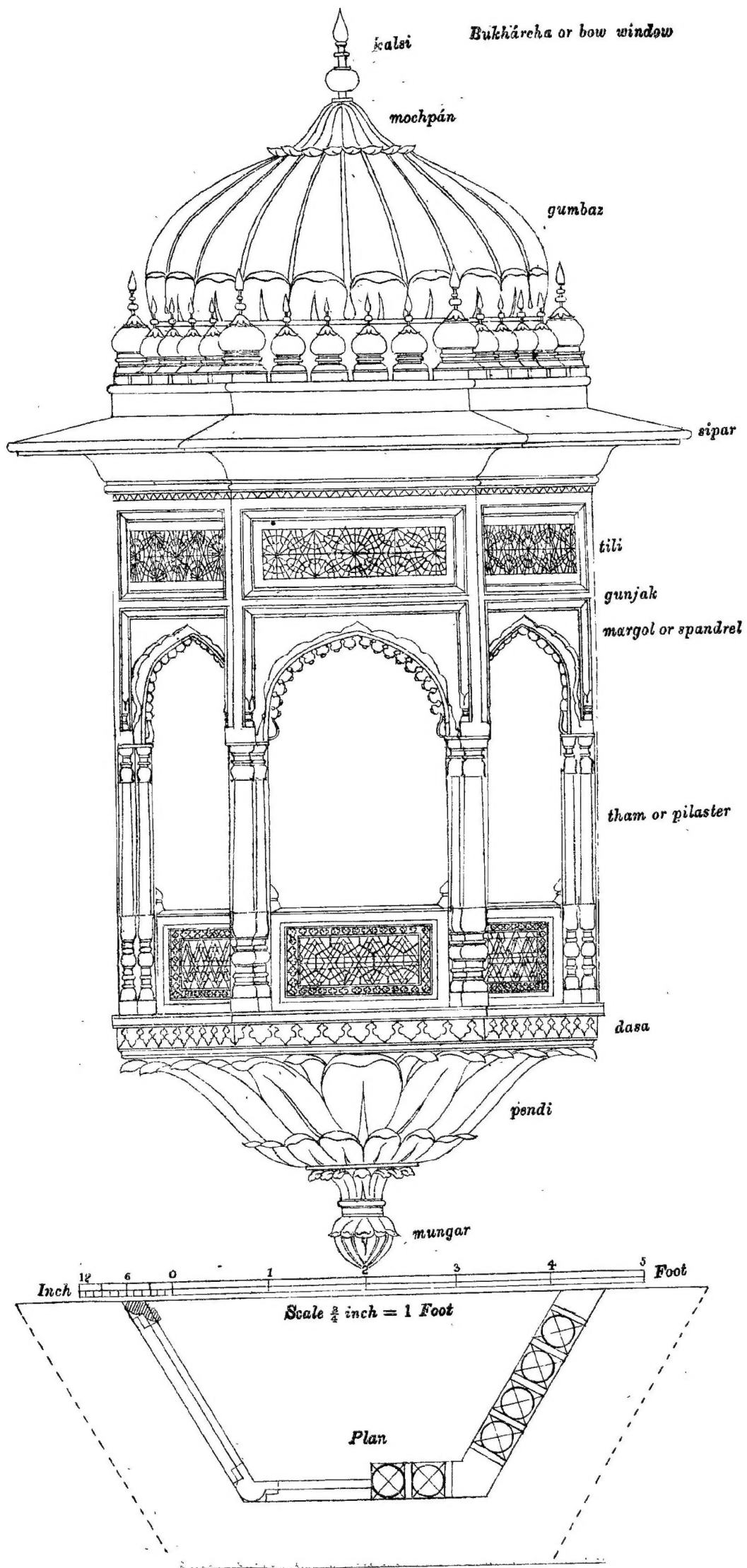


FIG. V.  
Bāri or Window.

